A Case Study Examining Undergraduate Public Health Student Experiences at a Large, Private, Urban Research University

A Dissertation

Submitted to the Faculty

of

Drexel University

by

Colleen P. Baillie

in partial fulfillment of the

requirements for the degree

of

Doctor of Education

June 2017

Dedications

This dissertation is dedicated to my family. Mom, Dad, Brian, Katie and my two biggest cheerleaders, Eamon and Henry. Your support and encouragement through this journey never wavered, and I owe this accomplishment to you.

And finally, to all of the students who gave their voices to this research, you are an inspiration.

Acknowledgements

Many thanks most especially to my dissertation committee, Dr. William Lynch, my supervising professor, Dr. Michael Haslip, and Dr. Subir Sahu. It was an honor and a privilege to work with you, and I owe any future success to your guidance and wisdom.

Thank you to Dr. Jennifer Breaux and Karen DeVose for your encouragement and support of this research.

Finally, to my EdD classmates, and two in particular, I never would have wanted to experience this journey with anyone else.

TABLE OF CONTENTS

List of Tables

List of Figures

Abstract

A Case Study Examining Undergraduate Public Health Student Experiences at a Large, Private, Urban, Research University

Colleen P. Baillie
Chairperson: William Lynch, PhD

Undergraduate students represent a new but growing population at a school of public (SPH) health at a large, private, urban research university on the East Coast. This SPH has offered a minor in public health since 2010, and a major was initiated in 2014. The school also plans to offer an accelerated bachelor's-to-master's in public health (BS/MPH) beginning in 2017. Although enrollment in undergraduate public health programs has increased, with continued growth projected, the school has little knowledge of these students' experiences and levels of satisfaction with their respective programs. Public health has deep traditions in graduate study, and incorporating undergraduate education at the SPH has been challenging. Faculty at the SPH are unfamiliar with undergraduate teaching and advising methods or the unique set of challenges faced by students from diverse backgrounds. Gaining a better understanding of undergraduates' experiences can better inform the SPH about the quality of classroom instruction and School programming, while helping position the field of undergraduate public health for sustainable growth and development.

This mixed-methods case study sought to understand undergraduate public health students' experiences at a large, private, urban research university. Using a sequential transformative approach, this case study collected feedback from undergraduate public health students through an electronic survey and a subsequent

focus group. The study was further informed by the assessment of existing support services and formalized programming at other colleges and schools within the university.

The study's major findings revealed that, although undergraduate public health students are satisfied overall with their experiences, programmatic challenges exist regarding course scheduling and infrastructure, cooperative learning experiences, and a lack of engagement and connection with the greater School community. Based on these conclusions, a five-year strategic plan will be developed for the undergraduate public health program in order to position it for continued growth and development. Recommendations include developing mentorship programs and connections between undergraduate students, graduate students, and faculty, and increasing opportunities for cooperative learning and related experiences.

Chapter 1: Introduction

In 2003, the Institute of Medicine (IOM) recommended that all undergraduate students have access to public health education (Gebbie, Rosenstock, & Hernandez, 2003). Other initiatives such as Healthy People 2020 have also encouraged the expansion of undergraduate public health programs for the education of more globally minded and well-rounded students (Koh, Nowinski, & Piotrowski, 2011). According to the Association of Schools and Programs of Public Health (ASPPH, 2016), Bachelor of Science (BS) and Bachelor of Arts (BA) programs in public health provide introductory and foundational coursework to prepare students for further study in public health. The Master of Public Health (MPH) degree provides specialized graduate training necessary for a professional career in public health (ASPPH, 2016).

A school of public health (SPH) at a large, private, urban research university developed an undergraduate minor in public health in 2010, and a formal undergraduate major began in 2014. This SPH was originally founded as part of another institution in the same metropolitan area; it formally merged with the larger university in 2002. Prior to the formation of the undergraduate major and minor programs, the SPH offered only graduate degrees, the majority of students being enrolled in the full-time MPH program.

Major physical, personnel, and administrative policy transitions began to occur in 2013 for both the SPH and the university. The SPH's longtime dean resigned at the end of the 2013 academic year after nearly ten years in the position. Additionally, the SPH relocated from a satellite campus to the university's main

campus in January 2014, and its new dean assumed her position shortly thereafter in February. Other leadership shifts began to occur during this time, with three associate deans pursuing positions at other institutions or transitioning out of their roles. All four academic departments at the SPH had interim department chairs, and permanent assignments for these departments were finally made during the 2015 academic year. The SPH has also been aggressively hiring new faculty in an effort to increase its research reputation, while the MPH curriculum has been undergoing a redesign since 2014. A new graduate curriculum is planned for implementation in Fall 2017 pending approval from the university. Finally, in September 2015, the SPH received a substantial donation that led to renaming it in honor of its benefactors.

Beginning in fiscal year 2017, the university transitioned from an incremental budget model to a Responsibility Center Management (RCM) budget model in which the institution's revenue-generating divisions and units maintain responsibility for their own revenues and expenditures. Under the RCM model, university units are awarded funds based on auxiliary funds, gifts and endowments, direct and indirect research funds, and tuition and fees. RCM is highly sensitive to student enrollment, and units within the university are rewarded based upon enrollment and entrepreneurial activities. As a private university, this institution and its SPH are under increasing pressure to generate tuition revenue that is maintained by both increased enrollment and increased retention.

The SPH experienced a period of rapid growth from 2009 to 2012, in which total enrollment in the full-time master's program increased over 50%. Beginning in 2013, the SPH's enrollment in the full-time master's program began to decline due to

issues including, but not limited to, tuition increases and an improved job market for recent college graduates (Council of Graduate Schools, 2013). Conversely, the number of undergraduates majoring in public health fields increased 750% from 1992 to 2012, and public health was ranked the 10th fastest growing area in undergraduate education (Leider et al., 2015). It is estimated that over 10,900 bachelor's degrees in public health were awarded in 2015, as compared to 1,430 in 2013 (Resnick, Selig, & Riegelman, 2017)

Research also indicates that there has been a growth in public health minors and concentrations, as well as an integration of public health coursework into college and university general education requirements (Resnick et al., 2017). Other schools of public health have reported similar trends, with undergraduate enrollment increasing while master's program enrollments have decreased or remained stable (White, 2015). The SPH recently implemented a five-year strategic plan focused on improving education, research and scholarship, civic engagement, practice and service, and governance and administration. In relation to the 2016 Strategic Plan's educational goal, the SPH specifically indicated it will seek to grow and enhance the undergraduate program's quality and develop appropriate connections and collaboration with the graduate program.

As of Fall 2016, the SPH was home to 59 undergraduate majors and 206 traditional master's students. In addition to degree-seeking students, 39 students were pursuing a minor in public health. The BS in Public Health requires students to complete courses oriented toward the core disciplines of public health, epidemiology, community health and prevention, environmental and occupational health, and health

management and policy, as well as a senior-year capstone experience. Students also have the opportunity to engage in a cooperative education program. The cooperative experience, typically completed for a period of three to six months prior to the junior year, allows students to gain practical, hands-on experience in their field of study. The undergraduate minor in public health is designed to complement existing university majors in the natural sciences, social sciences, and humanities. An additional minor in global public health was instituted for the 2016-17 academic year. Students enrolled in the undergraduate minor complete 12 credits over the course of their degree program, while undergraduate majors complete 181 credits, including university-required courses and courses outside the SPH.

The SPH is one of the most diverse schools within the university. The 2016 Strategic Plan stresses diversity, inclusiveness, empathy, and respect for others as a core value. Forty percent of all students in the SPH identify as non-White, and it is comprised of 75% female students. Within the undergraduate public health programs, over 60% of students identify as non-White, compared to 32% non-White undergraduate students for the university overall. The undergraduate program is also 80% female. The SPH heavily emphasizes social justice and a health and human rights approach to public health that most likely attracts these diverse populations. While the master's programs at the SPH receive administrative support from a faculty and staff representative in each of its four academic departments, the undergraduate program includes only one faculty and one staff person for all students enrolled. With the undergraduate program poised for growth, assessing the undergraduate climate can better position this program for continued growth and development.

Problem Statement

While the undergraduate population at the SPH has increased, with continued growth projected, little was known about these students' experiences and satisfaction with their respective programs. As the SPH continues to grow its undergraduate student population, a better understanding of these students will allow it to develop the appropriate support systems to ensure the program's success. Previous informal conversations revealed that undergraduate students have encountered numerous challenges with the program, including negative experiences with faculty and general feelings of alienation and disconnectedness from the greater SPH community.

Purpose Statement

This study sought to understand undergraduates' experiences in a graduate student-majority school of public health. As this SPH continues to grow its undergraduate major and minor programs and develop new programs such as an accelerated BS/MPH, it must recognize these students' specialized needs and characteristics and work with faculty to ensure students receive the highest caliber of instruction.

Significance

Cultivating undergraduate public health students allows universities to diversify the public health profession, as undergraduate public health majors enroll a significant number of women; underrepresented minorities; first-generation college students; lesbian, gay, bisexual, and transgender (LGBT) students; and other at-risk populations (Leider et al., 2015). Diversifying the public health workforce will also aid in addressing the health disparities that affect particular racial, ethnic, and

underrepresented groups (Rosenstock et al., 2008). While the growth of undergraduate public health programs is encouraging, studies reveal that fewer than one in ten undergraduates seek graduate training in public health (Leider et al., 2015). ASPPH estimates that the United States has experienced a decrease of 50,000 public health workers in the last 20 years and will need an additional 250,000 by the year 2020 (Rosenstock et al., 2008). The emergence of new diseases and epidemics and ongoing public health issues will require an educated workforce with specialized master's-level training to address these challenges.

Because public health originated as a master's-level discipline, faculty often lack experience in working with undergraduate students and have a "low tolerance for the administrative bureaucracy of undergraduate education" (Roe, 2009, p. 21). Undergraduate programs are also challenged with limited resources and available faculty to teach courses (Resnick et al., 2017). Undergraduate public health students possess distinct needs when compared to master's students, and they require more specialized guidance and advising (Arnold, Embry, & Fox, 2015). Undergraduate teaching also demands different methods and approaches, as well as greater course structure (White, 2015). Although undergraduate public health education incorporates a recommended public health core, it encourages connections to other disciplines such as the humanities and social and natural sciences (Riegelman & Albertine, 2011). Unlike the specialized curriculum in a master's program, undergraduate public health majors must fulfill course requirements outside of their major, and they have broader interests related to their professional growth and skills (Arnold et al., 2015). Faculty support for undergraduate public health programs is key, as they play a

crucial role in expanding and encouraging students' critical thinking skills and professional development (Arnold et al., 2015).

Lack of academic and social connections between undergraduate public health students and the greater SPH community can lead to higher attrition rates or changes of major, particularly among at-risk students (Engle & Tinto, 2008). This disconnectedness could also influence whether undergraduates choose to pursue master's-level public health training. The risk of attrition and potential for changes of major also holds implications for SPH revenue, which is highly sensitive to student enrollments.

Research indicates that participation in programs like learning communities and faculty-mentored research allows students to experience both personal and professional growth, increasing their sense of belonging in the academic community (Ishiyama & Hopkins, 2003; Kabes, Lamb, & Engstrom, 2010). Through participation in these activities, students develop more positive views of the university and faculty, as well as an increased appreciation for the diversity present amongst the cohort (Tinto, 1997). Guiffrida (2006) highlights that these social systems and students' feelings of communalism positively impact both student motivation and retention, especially among at-risk populations. Understanding and assessing undergraduates' experiences and the impact of faculty on student development will aid the SPH as it continues to grow and expand its undergraduate program offerings.

Research Questions

This case study was guided by the following research questions:

1. How do undergraduate public health students describe their experiences in the School of Public Health?
2. In what ways does participation and involvement in School of Public Health activities affect undergraduate public health students' satisfaction?
3. How do undergraduate public health students perceive the role of faculty in their academic and professional development?

These research questions aided the researcher in understanding undergraduates' experiences at the SPH, as well as their perceptions of program faculty, fellow students, and SPH programming and activities.

Researcher Stance

With an undergraduate degree in English, the researcher has naturally gravitated toward qualitative research and the use of language to convey experiences as opposed to statistics. The researcher is particularly interested in learning from students firsthand about their experiences. In the present study, she approached the research from an epistemological viewpoint, which recognizes that reality is dependent upon numerous perspectives, most importantly the research participants' perspectives. The participants' experiences directly informed the present research, as evidenced by participant quotes in the communication of research findings. Having worked for a school of public health for eight years, the researcher has found that conversations with and input from faculty and students provide a more robust and well-rounded understanding of the SPH environment, which quantitative data alone is unable to capture.

Developing undergraduate public health programs has been a challenge for the SPH, which is disappointing given the numerous health and social inequities in the United States and abroad. The researcher's previous informal conversations with undergraduate public health students have revealed a population that is passionate and dedicated to the discipline, particularly social justice issues. Cultivating and mentoring these students presents a unique opportunity for the SPH, yet these students indicate that they constitute an overlooked and forgotten population. Approaching this study through a social constructivist lens enabled the researcher to understand the experiences of an alienated and marginalized group. Undergraduate public health has also traditionally attracted more diverse and underrepresented populations in higher education, so a social constructivist approach was appropriate in this case study.

Conceptual Framework

The conceptual framework for this study was based upon Tinto's (2012) longitudinal model of institutional departure (see Figure 1). While Tinto's model incorporates factors influencing students' decisions to withdraw from a university or program, the present study's framework (see Figure 2) stresses student retention and satisfaction as the outcome.

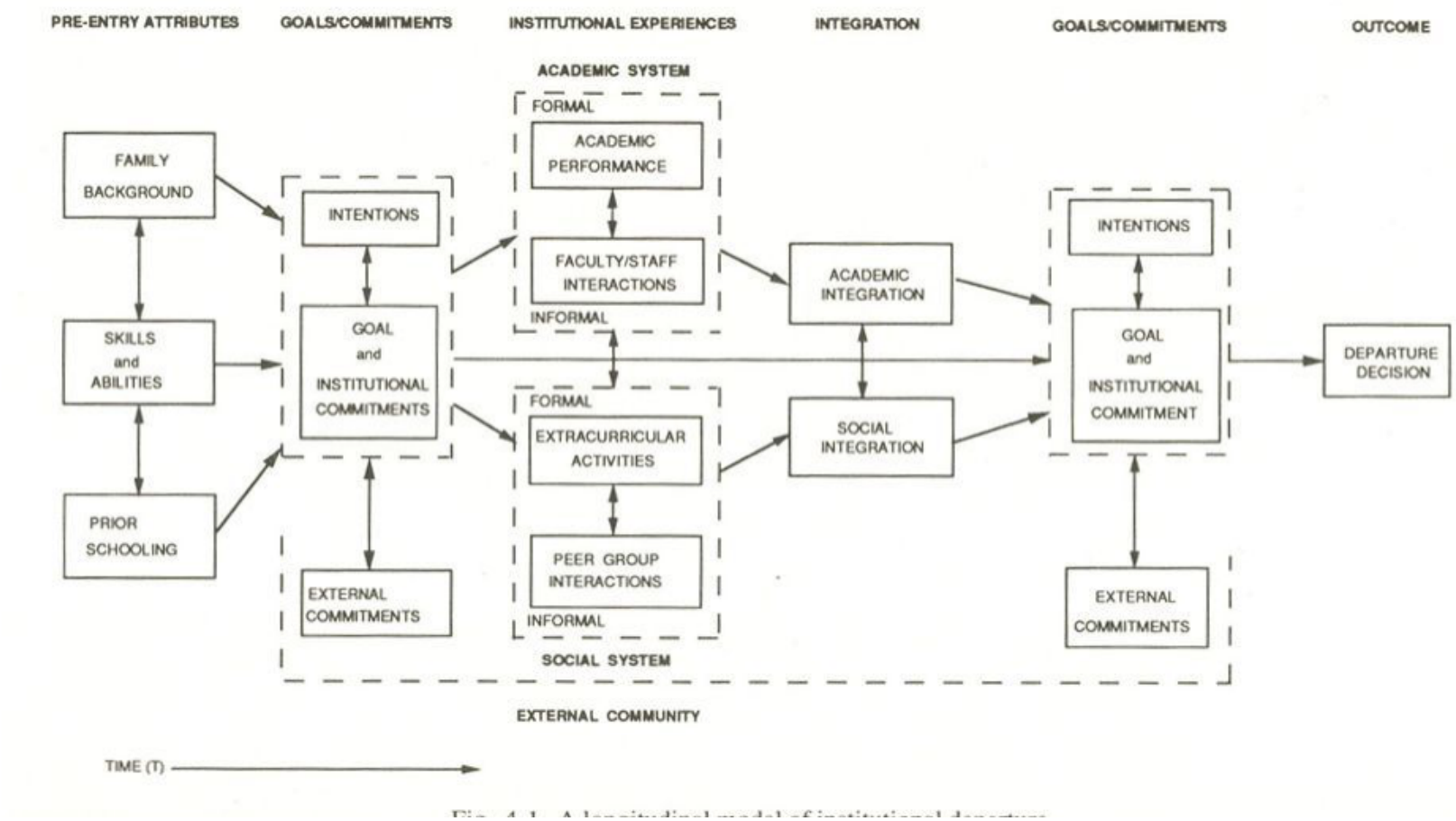
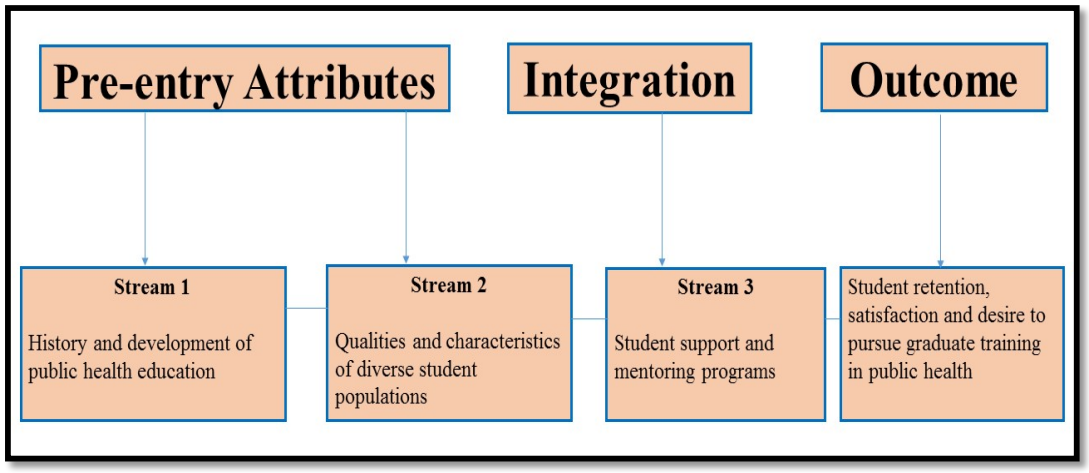


Figure 1. Tinto's model of longitudinal departure.

Figure 2. Conceptual framework.



The three literature streams provide a historical and broad context for understanding undergraduate public health students' experiences. As Figure 2 demonstrates, undergraduate public health students are heavily influenced by the three literature streams. This study drew from literature on the history and formation of public health education from such researchers as Welch and Rose (1916), Riegelman (2008), and Lee (2008), among others. Studies of underrepresented and at-risk students from researchers like Terenzini (1994), Pascarella et al. (2004), and Pike and Kuh (2005) provided a greater understanding of undergraduate public health students and retention strategies. Additionally, Kraska (2008), Terenzini et al. (1997), and Tinto (1997) have extensively researched university retention efforts, predominantly learning communities and faculty mentoring programs.

Definition of Terms

Because the following terms will be utilized throughout the present research, their definitions will assist in the reader's understanding the study's historical context and framework.

Public health: A population-based approach to the study of disease and injury prevention. Public health professionals seek to "implement educational programs, develop policies, administer services, conduct research, and regulate health systems" (ASPPH, 2016).

School of Public Health (SPH): Located within major research universities; offers more specialized degree offerings in public health, including undergraduate, master's, and doctoral programs (Council on Education for Public Health, 2016).

Bachelor of Science in Public Health (BSPH): Provides the "introductory foundations […] and broad training to prepare for further study in public health" (ASPPH, 2016).

Master of Public Health (MPH): A graduate degree that provides the specialized training necessary for a "professional career in public health" (ASPPH, 2016).

Accelerated degree programs: Educational programs in which degrees are obtained in a shorter period of time compared to traditional program lengths (Marques, 2012).

Learning community: A community in which students enroll and complete most courses together; a support network "intertwined with the academic program […] through a process of shared decision-making between faculty and students" (Kraska, 2008, p. 55).

Assumptions, Limitations, and Communication of Findings

As an employee of the SPH in this study for several years, the researcher held numerous assumptions, which are addressed in this section. The primary assumption

for this research claimed that undergraduate students are dissatisfied with their experiences at the SPH and therefore will choose not to pursue employment or graduate training in public health. As is noted in Chapter 4, study participants were overall satisfied with their experiences at the SPH, with many indicating that they plan to continue graduate training or pursue a career in public health. Negative experiences and feedback study participants reported were mainly infrastructural, such as class scheduling and the availability of cooperative learning experiences.

The study also encountered several limitations. The electronic survey was distributed to all undergraduate majors and minors but received a low response rate of 19%. In addition, all study participants in both the electronic survey and focus group identified as female. Although the gender breakdown is representative of female enrollment in undergraduate public health programs, feedback from male students could have provided unique results and perspectives. Participant recruitment, selection, and other research methods are addressed in further detail in Chapter 3.

The researcher's biases were bracketed and suspended in order to produce a more grounded and well-rounded study, particularly necessary when conducting backyard research (Glesne & Peshkin, 1992). Backyard research refers to studies that are conducted within the investigator's organization (Glesne & Peshkin, 1992). Although this study was completed at the researcher's place of employment, data collection did not include the researcher's co-workers or colleagues and only focused on current students who were not well-known to the researcher. All study participants remained anonymous and focus group participants are referred to in this study by numerical assignments to further protect this anonymity, as advocated by Glesne and

Peshkin (1992) and Creswell (2013). Details on the protection of subjects and other ethical issues are discussed in detail in Chapter 3.

Regardless of the study's assumptions and limitations, the results of this study can impact policy and the further development of undergraduate education at the SPH studied. Study results and findings will be presented to the Director of Undergraduate Education for further review. Following this initial communication of findings, the researcher will make recommendations to key stakeholders, including the Director of Undergraduate Education, program faculty, staff, and current students, on best practices to enhance the quality of undergraduate education at the SPH. Key to these proposed recommendations will be the formation of a five-year strategic plan specifically focused on undergraduate public health education. A strategic plan for undergraduate public health education can position the program for continued and sustainable growth, particularly as the SPH begins to develop new and integrated undergraduate programs. Some features of the strategic plan are outlined further in Chapter 5.

Summary

The looming public health workforce shortage, coupled with the expansion of undergraduate public health majors, provides an excellent breeding ground to cultivate future public health professionals, particularly those from diverse backgrounds. After a period of leadership transitions, administrative policies, and shifts in student enrollment, the timing is appropriate for the SPH in this study to gain a better understanding of student experiences in its undergraduate public health program. The SPH has yet to recognize and respond to undergraduates' unique needs

and characteristics on a larger scale. This lack of engagement with undergraduate students has significant implications for the growth of this program as well as programs in development, such as the accelerated BS/MPH.

The results of this case study can inform existing undergraduate public health programs and aid in the expansion of others. Undergraduate public health programs offer the SPH a unique opportunity to cultivate highly qualified and diverse students into future public health professionals. However, the lack of formal programming and support from faculty and the greater SPH community may result in negative experiences for students and discourage them from pursuing advanced training or careers in public health.

Chapter 2: Literature Review

Introduction

While the undergraduate population at the SPH in this study has increased, with continued growth projected, little is known about these students' experiences or satisfaction within their respective programs. The conceptual framework in this study recognizes that the undergraduate public health program at the SPH faces challenges based on several key factors. Public health's foundations and origins as a graduate-level discipline require different curricular, instructional, and faculty advising methods (Arnold et al., 2015; White, 2015). Undergraduate public health also attracts a higher proportion of underrepresented minorities, women, first-generation students, low-income students, and other at-risk populations (Leider et al., 2015). The SPH must understand and acknowledge these students' diverse backgrounds and qualities. Finally, because these students are at greater risk of attrition, establishing the appropriate connections and school-wide support systems becomes crucial to their academic and professional success. The following section provides further detail on the literature streams that informed this study.

The following three literature streams emerged during the research: 1) History and development of public health education, 2) Qualities and characteristics of at-risk student populations in higher education, and 3) Learning communities and student support systems. Since public health was originally established at the graduate level, exploring the history and development of public health education provides a helpful context for the growth of undergraduate public health majors and accelerated programs. Reviewing existing literature on undergraduate public health programs and

best practices will assist the SPH in its curriculum development, academic policies, and related issues. As public health traditionally attracts more diverse and at-risk students, such as underrepresented minorities, women, and first-generation college students, understanding these populations' specialized needs and characteristics will help the SPH develop appropriate support systems. Finally, a background on learning communities and faculty mentorship programs demonstrates the necessity of incorporating such support systems to help maximize student success and retention.

While barriers and challenges exist in the development of undergraduate public health programs, the literature and research discussed in this review provides valuable groundwork as the SPH expands its undergraduate degree offerings. This chapter discusses how undergraduate public health education has evolved in the United States along with several established undergraduate-graduate partnerships to encourage enrollment in MPH programs. The literature on at-risk and diverse populations in higher education is discussed, and finally, research on learning communities and other related support systems demonstrates the need to form such a support network to retain these students and encourage their professional and educational advancement in public health.

History and Formation of Public Health Education

Although public health as a profession can be traced back to ancient times (Riegelman, 2008), the case for academic public health in the United States was first made in 1913. At a Rockefeller Foundation conference, officials called for the creation of public health as a distinct profession from medicine with its own educational institutions (Fee & Bu, 2007). The Welch-Rose Report of 1915, co-

authored by William Welch and Wickloff Rose, further cemented this need for trained public health professionals by proposing an "institute of hygiene" (p. 49) modeled after the British and German models of administration and scientific public health, respectively. Welch and Rose viewed public health as a social science independent of medicine, due in large part to the social changes occurring in East Coast urban centers at the time, such as immigration, sanitation, and poverty issues (Fee & Bu, 2007). Their educational model encouraged grounding in both research and practice. The Rockefeller Foundation approved Welch and Rose's plan for public health education and established the nation's first school of public health, the Johns Hopkins School of Hygiene and Public Health (Fee & Bu, 2007).

Public health education was further developed in 1921 by the Committee of Sixteen, which sought to standardize public health training (Abbott et al., 1921). This report defined the MPH as the "first degree" (Abbott et al., p. 374) in public health, establishing it as the professional degree for public health workforce training. While the report also mentions the Bachelor of Science in Public Health (BSPH), the Committee states that the BSPH provides the "fundamental sciences associated with hygiene and public health" (Abbott et al., p. 373).

Access to Undergraduate Public Health Education

In 2003, the IOM 2003 advocated for an increase in undergraduate coursework and degree offerings in public health (Gebbie et al., 2003). The IOM specifically indicates that professional preparation in public health must occur at the master's level, while bachelor's training can serve as a pipeline to graduate public health. Similar experts have agreed that the bachelor's degree should provide "solid

generalist grounding for graduate education" (Riegelman & Albertine, 2011, p. 226) in public health. Approximately half of all schools and programs of public health began offering undergraduate coursework in the form of minors and bachelor's degrees in public health by 2006 (Riegelman & Albertine, 2011). According to Leider et al. (2015), this rapid expansion produced 50,000 graduates from 1992 to 2012, with nearly half occurring after 2008.

ASPPH's projected workforce shortage in 2008 was further exacerbated by the 2008-10 recession, as well as a 29% projected retirement eligibility rate among public health practitioners (Holsinger, Lewis, & Chen, 2015; Rosenstock et al., 2008). Public health undergraduates have the potential to alleviate some of this workforce shortage by providing entry-level practitioners (Holsinger et al., 2015). Undergraduate public health majors are offered as BA, B,) and BSPH degrees. While the BSPH is typically housed and managed within a school of public health, the BA and BS degrees are more likely found within colleges of arts and sciences (Holsinger et al., 2015). This distinction is important, as BSPHs mirror the MPH in course offerings. In their analysis of undergraduate public health degree programs, Holsinger et al. (2015) argue that while undergraduate students could fulfill positions previously occupied by individuals with the MPH, the academic content found in their bachelor's programs may be questionable.

The Tulane University School of Public Health and Tropical Medicine (SPHTM) began its BSPH program in 2005; the program currently comprises one-third of the school's total enrollment (White, 2015). The SPHTM credits the number of undecided majors enrolling in introductory public health courses, an undergraduate

student community service requirement, and the interdisciplinary content of public health for its robust undergraduate population (White, 2015). Subsequent research on Tulane BSPH graduates indicate that the majority pursue graduate or professional degree programs, further demonstrating the need for advanced training (White, 2015). They note that students who do pursue employment find jobs related to public health education, but outside traditional positions in governmental public health (White, 2015). Tulane's research verifies Holsinger et al.'s (2015) speculations that the BSPH may not be adequate for traditional public health workforce entry. As such, accelerated degree options and articulation from undergraduate to graduate coursework may encourage more enrollment in public health education.

In addition to advocating for undergraduate public health education, the 2003 IOM report also recommended that graduate programs in public health collaborate with undergraduate programs to further advance public health education (Gebbie et al., 2003). Research in other graduate programs has also argued for collaboration and articulation between undergraduate and graduate study. A lack of connections between the undergraduate and graduate programs and school communities may discourage undergraduate majors or minors from pursuing graduate study in the discipline, resulting in a loss to the profession (Lee & Nowicki, 2005).

As a new and evolving academic discipline, undergraduate public health is well-positioned to offer a pipeline into advanced graduate study. Despite the growth of undergraduate public health programs and initiatives to expand access to public health education, national research demonstrates that undergraduate students are not pursuing the MPH degree (Leider et al., 2015). This academic disconnect between

undergraduate and graduate public health degrees may serve as a barrier for students interested in advanced study. With the expansion of undergraduate public health majors and new degree programs like the accelerated BS/MPH, undergraduate programs can provide pipelines into graduate education and potentially encourage more undergraduate students to pursue advanced training in public health.

Accelerated Degree Programs

For the purposes of this literature review, accelerated degrees are defined as educational programs in which degrees are obtained in a shorter period of time compared to traditional program lengths (Marques, 2012). Accelerated learning also encompasses condensed coursework, which could be interwoven into accelerated degree programs. The following section discusses existing bachelor's-to-master's programs and their implications for the development of BS/MPH programs. As stated, the SPH in this study plans to implement an accelerated BS/MPH program in Fall 2017.

Critics of accelerated learning argue these programs and courses are less intensive and rigorous than their traditional counterparts (Kuscera & Zimmaro, 2010). Research, suggests, however, that accelerated programs deliver the same, if not increased, academic rigor and learning outcomes. Studies have found that students in accelerated programs are highly motivated and focused, largely due to the concentrated format of the degrees (Kuscera & Zimmaro, 2010).

The University of South Florida (USF) College of Public Health has offered an undergraduate major in public health since 2011 and has implemented two accelerated options for a BS/MPH (Perrin & Merrell, 2014). These programs provide

an excellent example of the public health field's ability to offer an accelerated public health degree and partner with other disciplines. The first BS/MPH option, housed within the university's Honors College, allows students from any major to pursue the MPH after the completion of 90 credit hours (Perrin & Merrell, 2014). By enrolling in four graduate-level courses, students fulfill upper-level electives for the bachelor's programs and MPH core courses (Perrin & Merrell, 2014). The second BS/MPH option operates similarly with a 12-credit overlap; however, this option formally partners with specific undergraduate majors, such as the sciences and geography (Perrin & Merrell, 2014). In addition, students are charged tuition at the undergraduate rate while completing these core graduate courses, alleviating some of the costs associated with graduate education (Perrin & Merrell, 2014).

Suggested strategies for articulation between undergraduate and graduate public health programs encourages a "3-plus-2" or "4-plus-1" model in which the bachelor's and master's degree are obtained in a five-year timeframe (Lee, 2008). Developing accelerated bachelor's-to-master's programs allows universities to cultivate bright and motivated students for the specialized graduate study necessary for a career in public health. The BS/MPH currently under development at the SPH in this study will adopt a 4-plus-1 model, with students billed at the undergraduate rate for their core graduate classes, like USF's program. While this program is currently under review and cannot be formally implemented until the university's faculty senate approves the new MPH curriculum, the SPH plans to pilot the BS/MPH program with three undergraduates in Fall 2017.

Challenges for accelerated programs. While numerous benefits exist for bachelor's and master's articulation, universities must also consider some of the barriers to developing these programs. Dual enrollment of undergraduate and graduate students in a course with varied ages and skill sets can complicate teaching (Lee & Nowicki, 2005). Since public health initially developed at the graduate level and was followed by undergraduate degrees and minors, universities must also be mindful of the potential for course similarities or duplication (Lee, 2008). Students who pursue their undergraduate and graduate degrees at the same university may experience limited growth opportunities by being exposed to the same network of classmates and faculty. A study of MBA students found that students who attended the university as undergraduates did not perform as well as students who had obtained their undergraduate degrees elsewhere (Gupta & Turek, 2015). Suggestions for addressing some of these barriers to articulation are outlined below and in the subsequent section on student support.

Advanced standing. Undergraduate public health students interested in pursuing graduate training in public health should be offered the opportunity to bypass certain introductory requirements, since the potential for course duplication at the undergraduate and graduate level is high (Lee & Friedman, 2015). Graduate program academic policies could allow undergraduates to substitute graduate-level courses for upper-division undergraduate coursework (Lee & Nowicki, 2005). For undergraduate public health majors and minors, the ability to waive these courses or proceed directly to graduate-level courses will prove beneficial in recruiting

undergraduate students for the MPH, while encouraging increased collaboration between undergraduate and graduate students.

Accelerated degree programs offer students the unique opportunity to condense their studies at reduced costs. These programs also provide students with the ability to expedite their workforce entry, a critical issue for public health. Although universities will encounter challenges in developing accelerated programs, strategies such as those outlined above will ensure that students can receive the specialized graduate training necessary for the public health profession. In addition to eliminating some of the academic disconnect between the undergraduate population and schools of public health, these institutions must also create the supportive environment and networks to maximize student success and satisfaction. Particularly as public health attracts a higher proportion of underrepresented students, these policies and practices can benefit retention and student outcomes.

As undergraduate public health education evolves and incorporates new degrees such as accelerated programs, schools of public health must be cognizant of the challenges that relate to both the curriculum and the students enrolled. Research has indicated that public health attracts a highly diverse student body. Understanding these students' unique qualities and needs will allow schools of public health to develop the appropriate support systems to maximize student retention and give these students a sense of belonging in the academic community.

Qualities and Characteristics of Diverse Student Populations

As public health enrolls a significant number of women, minorities, first-generation students, and other at-risk populations (Leider et Al., 2015), the SPH in

this study must understand these students' qualities and characteristics to best maximize retention and student satisfaction. The following section discusses the qualities and characteristics of specific at-risk populations. Understanding their pre-entry attributes will better inform undergraduate public health programs about their student bodies' makeup. These students also experience a challenging transition to college or university life, further complicated by faculty biases and misconceptions. As both the transitional first year of college and faculty support are key to student retention, knowledge of these issues will inform the SPH on how to best cultivate its student body.

Student populations such as women, underrepresented minorities, and first-generation or low-income students are considered at-risk largely due to factors such as their cultural and economic backgrounds (Tinto, 2006). The institutional environment also plays a role in student success as these students adjust to college and university life. Tinto (2006) notes that at-risk students often remain connected to their own communities after enrolling. While he argues that maintaining these connections can positively impact student persistence, family or community obligations can potentially deter students from engaging in campus life, particularly during the critical first year. Disadvantaged students are more likely to work and live off-campus, and they are less inclined to seek help from faculty (Pike & Kuh, 2005). This lack of engagement with campus academic and extracurricular life often results in attrition among these populations (Astin, 2006; Tinto, 2006).

Diverse Populations

Researchers note that women tend to have higher attrition rates in social science programs when compared to the sciences (Kraska, 2008). Similarly, while 56% of high-income students are likely to graduate within six years, only 26% of low-income students will do so (Enstrom & Tinto, 2008). First-generation college students, those in which neither parent attended college, show a 15% gap in three-year persistence rates when compared to their second-generation peers (Pike & Kuh, 2005). Research also indicates that first-generation students lack sufficient high-school academic preparation and tend to come from families with lower incomes and "lower educational aspirations than their second generation counterparts" (Pike & Kuh, 2005, p. 277). First-generation students have also been shown to have unrealistic expectations and lack general knowledge about navigating the college or university environment, such as program costs, application requirements, and academic policies (Dolan, 2008; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Phinney, Dennis, & Chuateco, 2005). These students are also more likely to be male underrepresented minorities who have lower grades (Pascarella et al., 2004; Pike & Kuh, 2005).

Like first-generation and low-income students, underrepresented minorities also encounter challenges in adjusting to college or university life (Allen, 1992; Baker, 2015; Dolan, 2008). Research indicates that African American students have lower standardized test scores and weaker academic backgrounds than their White classmates (Allen, 1992; Banks, 2010; Dolan, 2008). African American females report other disadvantages, such as feeling more anxious and less confident in

academic settings (Allen, 1992; Banks, 2010; Dolan, 2008). Hispanic students report similar feelings and degree-completion challenges, and they are heavily influenced by outside environmental factors, such as family commitments and working off-campus, which can negatively impact retention (Arbona & Nora, 2007). While these at-risk populations possess unique challenges in an academic setting, their transition to the college or university environment heavily influences their likelihood of retention.

Transition to College

As demonstrated in the previous section, adjusting to a new academic environment goes far beyond a student's academic background. By comparison to their peers, students from disadvantaged backgrounds encounter a very different and more difficult transition to college (Terenzini et al., 1994; White & Lowenthal, 2011). Research indicates that among these students, enrolling in college "constituted a major *disjunction* in their lifecourse" (Terinzini et al., 1994, p. 63). A first-generation, lower-income, or underrepresented minority student may be viewed as rebelling from his or her family and community by attending college (Tinto, 2012). The numerous external forces facing college students, particularly those from disadvantaged backgrounds, have a strong influence on the student's critical freshman year (Tinto, 2012). Many of these transitional and academic challenges can be attributed to students' cultural backgrounds and poor high-school preparation. Although beyond the control of colleges and universities, existing research indicates that the institutions themselves are not taking disadvantaged students' issues into account.

White and Lowenthal (2011) found that minority students are forced to "adopt a form of discourse that originated in and often perpetuates oppression" (p. 289),

which further complicates and contributes to their feelings of alienation and disengagement. Additionally, minority students report experiences with racism, hostility, and invisibility, particularly at predominantly White institutions (Baker, 2015; White & Lowenthal, 2011). Tinto (2012) notes that minority student persistence is often linked to "similar types of students on campus with whom to form a viable community" (p. 60). Banks (2010) also found that racism and prejudice marginalized groups experience on college campuses were associated with negative mental and physical health effects. Similar experiences have been reported by LGBT students, who not only experience harassment and mental health issues, but challenges in coping with their emerging sexual identity (Schmidt, Miles, & Welsh, 2011). Academically, students who feel they "stick out" and do not belong will not perform as well as those who feel a sense of belonging in the classroom (Strayhorn, 2015).

Research indicates that attrition rates are highest during the first year of a student's academic program (Tinto, 1998, 2012). The ability to transition successfully into these academic environments includes establishing connections with other students, participating in campus activities, performing satisfactorily in the classroom, and feeling committed to the college or university (Astin, 1999; Zea, Jarama, & Bianchi, 1995). Astin (1975, 1999, 2006) also notes the importance of living in a campus residence hall, which has shown to be a high predictor of both a student's retention and his or her likelihood of continuing on to graduate and professional education (Astin, 1975, 1999).

This transitional period becomes increasingly problematic for students attending predominantly White colleges or universities or those institutions with different cultures than their own (Pike & Kuh, 2005). Underrepresented students are forced to adapt and adjust to a college's or university's culture (White & Lowenthal, 2011). As White and Lowenthal (2011) discuss, these institutional cultures often run completely counter to minority students' existing cultural and linguistic norms. As a result, students refrain from active classroom participation, their grades suffer, and they are left feeling alienated and intellectually inferior (White & Lowenthal, 2011). Baker (2015) likewise argues that university policies and procedures often work against underrepresented minorities, which further exacerbates their feelings of dissatisfaction and alienation.

Diverse students' difficulties in adapting to the college environment are understandable given the numerous obligations and obstacles they face Research also demonstrates that this sense of belonging is crucial to the success of all students, not just those who are considered at-risk (Zea et al., 1995). Students' interactions with faculty are of critical importance; however, research indicates that faculty possess bias and lowered expectations of at-risk and underrepresented students.

Faculty Perceptions of Students

Research demonstrates that a sense of belonging in the college or university environment and contact with and support from faculty in and outside the classroom positively impact student retention and satisfaction (Tinto, 2006). Strayhorn (2015) notes that a sense of belonging can be context-specific. Students may feel at home within an extracurricular organization or athletic team, but not within their academic

major (Strayhorn, 2015). Negative classroom experiences and interactions with faculty often prevent this sense of belonging and have negative consequences for students' motivation (Strayhorn, 2015). Tinto (2012) argues that most freshmen enter college unsure of their long-term educational or professional goals. Faculty view this indecisiveness as a "deficiency rather than a natural part of their personal and intellectual growth" (Tinto, 2012, p. 41).

These faculty interactions have implications for both a student's persistence in the academic major and his or her career aspirations (Engle & Tinto, 2008). In addition to their academic and social adjustment issues, at-risk students also report a lack of faculty concern and interest in their well-being (Pascarella et al., 2004; Pike & Kuh, 2005). Strayhorn (2015) indicates that faculty possess negative biases and pre-judge students based upon their race, class, gender, and other identities.

Female students now outnumber male students on college campuses and are considered the largest segment of the college student population (Tinto, 2012). A study of faculty bias toward female undergraduate students in the sciences revealed that both male and female faculty hold negative biases toward female students (Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012). Moss-Racusin et al.'s (2012) study also found that faculty were more likely to mentor male students than females. Although this study was focused on female students in science disciplines, it has implications for public health, which includes science and mathematics coursework, as well as specialty areas in epidemiology and biostatistics.

White and Lowenthal (2011) also report that faculty have lower expectations for minority students as compared to their White peers. Faculty fail to recognize how

disadvantaged students' cultural identities contribute to their academic integration (White & Lowenthal, 2011). These negative and disparate experiences for female and minority students can result in changes of major or deter students from pursing advanced study in the discipline.

Research demonstrates that connections with faculty members both in and outside the classroom enhance students' experiences and positively impacts their retention (Tinto, 1997). To increase retention rates among all students, faculty must demonstrate high-quality teaching and mentorship. While faculty argue that retention is the result of students' poor academic backgrounds and should be the responsibility of student affairs professionals, "student retention is everyone's business […] and the business of the faculty in particular" (Tinto, 2006, p. 5).

Women, first-generation college students, underrepresented minorities, and LGBT students experience a unique set of challenges in adjusting to the college environment. Stressors like a lack of belonging on campus, feelings of alienation from the academic community, and poor relationships with faculty can lead to student attrition (Gibson & Willison, 2011). Phinney et al. (2005) discuss that the availability of supportive faculty can be equally or more predictive of academic success than cognitive variables like high-school GPAs or standardized test scores. Likewise, Schmidt et al. (2011) found that campus climate strongly predicts LGBT students' persistence and career development. Regardless of whether a student identifies with an underrepresented group, establishing the appropriate support systems and faculty connections can help ensure all students' success. As a new population in public health education, undergraduate students are newcomers within a well-established

group. By demonstrating to students that the institution cares about their success and well-being, colleges and universities will increase engagement, particularly among marginalized populations (Destin & Kosko, 2016). As Strayhorn (2015) notes, "mattering matters" (p. 43), and the availability of learning communities and related support systems has been shown to increase student satisfaction and a sense of belonging within the academic environment.

Student Support and Mentoring Programs

The necessary support and advising structures are instrumental in ensuring undergraduate public health students' success. Intimidated by the college or university environment, disadvantaged students encounter difficulties transitioning into academic life. However, increasing support services demonstrates that the institution cares about them and is committed to their success (Destin & Kosko, 2016). This sense of belonging is instrumental in the satisfaction and retention of all students, not just those that identify with a disadvantaged group.

Learning Communities

Numerous definitions exist for learning communities. "Cohort" is one common term used to describe learning communities in which students enroll and complete most courses together (Kraska, 2008). For the purposes of support and group learning, learning communities can be defined as "intertwined with the academic program […] through a process of shared decision-making between faculty and students" (Kraska, 2008, p. 55). Learning communities work most effectively when they are organized in small groups, encourage interaction among students and faculty, and integrate an inclusive and connected curricula (Fink & Inkelas, 2015).

Learning communities provide students with a shared experience and resource network that fosters a collaborative environment (Kraska, 2008). This collaboration and active participation results in increased learning opportunities for students (Astin, 1999).

Learning communities put students in the driver's seat, where they are actively engaged in "collaborative problem solving, community building and peer review" (Kabes et al., 2010, p. 48). Research indicates that in learning communities, students feel a sense of personal and professional growth and accomplishment, increasing their sense of belonging in the academic community (Ishiyama & Hopkins, 2003; Kabes et al., 2010). Students who participate in learning communities also report more positive views of the university and faculty, as well as an increased appreciation for the diversity present within the cohort (Chang, Astin, & Kim, 2004; Tinto, 1997). These social systems and students' feelings of communalism have been demonstrated to positively impact both student motivation and retention, especially among at-risk populations that benefit from more formalized programming (Chang et al., 2004; Guiffrida, 2006; Tinto, 2012).

Participation in these communities has been shown to develop students' autonomy through engagement in subjects and activities that align with their values (Guiffrida, 2006). By engaging in interesting and meaningful activities both in and outside the classroom, students develop the need to interact with their peers and faculty (Guiffrida, 2006). These connections have also been shown to increase students' motivation and encourage them to challenge and develop themselves in new ways (Guiffrida, 2006). With the growing diversity in public health education,

learning communities also allow students to gain a respect for one another and their differences and contributions to the academic community (Kabes et al., 2010).

Learning communities and peer support also help disadvantaged students cope with the stress and pressures of college (Phinney et al., 2005; Schmidt et al., 2011). Support programs that encourage both social and academic integration result in increased student persistence, with academic integration as the more important (Guiffrida, 2006; Tinto, 1998). The development of learning communities can provide support networks for undergraduate students to gain confidence and academic skills to integrate themselves fully into schools of public health.

Faculty Connections and Mentorship

Although the benefits of these communities are clear, their success depends largely on the involvement of faculty, whose guidance and mentorship proves to be one of the most effective strategies to retain students. Learning communities extend beyond relationships between fellow students. The sense of belonging and collaboration students achieve through these learning communities can positively contribute to their success, and even more so, through their connections with faculty. Experiences with faculty allow students to feel validated as "capable of learning and deserving of a place in a college classroom" (Terenzini et al., 1994, p. 67). By building an academic identity, students increase their interaction with faculty and their peers in productive and meaningful ways (White & Lowenthal, 2011). Learning communities also demonstrate a positive impact on faculty by encouraging more interdisciplinary connections across campus (Tinto, 1998).

Developing relationships with faculty can be difficult for students, particularly those from underserved backgrounds (Astin, 1999; Gibson & Willison, 2011). For these students, the faculty mentor and/or advisor is instrumental in developing a student's academic and, ultimately, professional career (Girves & Wemmerus, 1988). Female underrepresented students in particular benefit from these relationships (Baker, 2015). Frequent student-faculty interaction has also been shown to increase institutional satisfaction across all dimensions on campus (Astin, 1999).

Other research has discovered strong connections between faculty teaching and organizational skills and student achievement (Braxton, Bray, & Berger, 2000). In the development of undergraduate education, schools of public health must consider the potential for faculty bias. These faculty often lack experience working with undergraduate students and have a "low tolerance for the administrative bureaucracy of undergraduate education" (Roe, 2009, p. 21). Unsupportive faculty focused more on their own research than teaching has been cited as one reason for student attrition (Roe, 2009). Recognizing the connection between faculty development and student retention, school of public health must ensure that faculty are aware of the differences between undergraduate and graduate education and receive the appropriate professional development to deliver the highest caliber of instruction (Braxton et al., 2000). Research suggests faculty should also receive training in areas such as "cultural sensitivity, competent communication skills and flexible thinking" (Straw, 2014, p. 17).

Student mentorships with faculty are also attributed to increased degree persistence and completion (Straw, 2014). Students cite being treated as junior

colleagues as one of the most fulfilling and positive aspects of their academic experience (Girves & Wemmerus, 1988). Particularly with underrepresented and first-generation college students, research indicates that establishing a sense of professional identity leads to lower attrition rates (Kim-Prieto, Copeland, Hopson, Simmons, & Leibowitz, 2013). This sense of belonging to a community of academics or scientists allows students to better hone their problem-solving skills and confidently discuss and propose research with faculty (Kim-Prieto et al., 2013). Interactions with faculty both in and outside the classroom increases student retention and satisfaction with their academic program (Girves & Wemmerus, 1988; Kraska, 2008). In addition to faculty connections, schools of public health must also consider students' professional development needs. Since the goal of undergraduate public health is to cultivate and train future public health professionals, practice-based opportunities will further aid in student development.

Service- and Practice-Based Learning

Although degree attainment should still be considered a measure of success, students must also be exposed to experiences that prepare them for "life, work and citizenship" (American Association of Colleges & Universities [AAC&U], 2007, p. 36). Based on public health social justice appeal, undergraduate students are naturally drawn to service-learning opportunities in both local and global settings (Resnick et al., 2017). Diverse students in particular are drawn to these opportunities, as they allow these populations to engage with and support the health of their own communities (Resnick et al., 2017). These practice and research experiences become

instrumental in developing undergraduate public health students' skillsets and influencing their desire to pursue graduate and professional school training.

Existing literature advocates for incorporating service-learning into undergraduate public health curricula. Service-learning allows students to "apply knowledge and skills in an immediate and relevant setting" (Cashman & Seifer, 2008, p. 273). Although new to public health, service-learning has deep roots in undergraduate education and has been shown to positively affect student development, leadership abilities, and cultural competency, among other skills (Cashman & Seifer, 2008). In addition, service-learning also allows for increased understanding of course content and student-faculty interactions (Cashman & Seifer, 2008).

Practice and service-learning is not limited to community settings. Research has also demonstrated that students, particularly those from underrepresented groups, benefit from research experiences. In a mixed-methods study of graduate students in science, technology, engineering, and math (STEM) fields, Harsh, Maltese, & Tai (2011) found that undergraduate research experiences improved retention rates among underrepresented students. In addition, participant comments in this study echoed many of the aforementioned studies on the importance of student-faculty interactions and mentorship. Students who were treated like colleagues and partners by faculty could independently hone their research skills, resulting in publications and conference presentations for some (Harsh et al., 2011). Not only does exposure to practice-based learning and research opportunities improve retention, it allows students to hone the practical skills necessary for a career in public health.

Learning communities allow students to build relationships with their fellow students both in and outside the classroom, which positively impacts their academic performance and overall university experience. Strong relationships with faculty established early in the students' undergraduate curriculum leads to higher retention rates and overall student satisfaction with the academic program. Faculty collaboration should also transcend the classroom through research and practice opportunities in which students can hone the skills necessary for professional success. The support systems demonstrate to students that they are valued members of an academic community.

Summary

As public health traditionally attracts more diverse and at-risk students, the SPH in this study must understand these students' unique qualities and needs. At-risk students' pre-existing challenges are further exacerbated by a discipline that is rooted in graduate study and faculty that lack understanding and empathy for at-risk student populations. Establishing the necessary support systems can ensure these students achieve success in a highly rigorous academic environment. Learning communities, faculty mentorship, and service-learning have been shown to increase students' likelihood of degree completion and demonstrate to students that they are valued members of the academic community.

The present case study attempted to understand undergraduate students' experiences in a school of public health housed within a large, private, urban research university. As previously stated, students in this program are more likely to identify as female, first-generation college students or as members of other disadvantaged and

at-risk groups. A lack of inclusivity and formal programming for this population can result in withdrawal from the undergraduate public health program or the university. Chapter 3 provides an overview of the study methodology to gain better insight into undergraduate student experiences at the SPH.

Chapter 3: Research Methodology

Introduction

This case study sought to understand the experiences of undergraduate students at a school of public health located in a large, private, urban research university. While the undergraduate population at the SPH has increased, with continued growth projected, little was known about these students' experiences and satisfaction within their respective programs. The SPH plans to increase enrollment in its undergraduate programs and develop other degree offerings, such as an accelerated BS/MPH. To better inform program implementation and growth, the SPH must understand these students' specialized needs and characteristics, working with the necessary stakeholders to ensure a high-quality academic experience.

Research Questions and Methods

This study sought to understand the experiences of undergraduate students at a school of public health located in a large, private, urban research university. The development of the study has been informed by the following research questions:

1) How do undergraduate public health students describe their experiences in the School of Public Health?
2) In what ways does participation and involvement in School of Public Health activities affect undergraduate public health students' satisfaction?
3) How do undergraduate public health students perceive the role of faculty in their academic and professional development?

Public health originated as an academic discipline at the graduate level, and incorporating undergraduate education at schools of public health has been a

challenge, particularly for faculty (Resnick, et al., 2017; Roe, 2009). Potential faculty biases and disinterest in undergraduate education can negatively impact students' classroom experiences, as well as their participation in school activities and events. This chapter includes more detailed descriptions of the present study's population, site, and research methods to better guide the proposed study design.

Site and Population

Site Description

This case study was conducted at an accredited SPH located in a large, private, urban research university located in a major metropolitan area on the East Coast. The university has a population of 26,000 students, including undergraduate, graduate, professional, and online learners. The university also displays a strong commitment to civic engagement through a wealth of community partnerships and an emphasis on practice-based learning. The SPH was founded in 1996 through another institution, but it formally merged with this university in 2002. The SPH is one of 15 colleges and schools at the university. The university is classified as a research university, with very high research activity, according to its Carnegie Foundation classification.

The SPH is home to over 300 students, the majority of whom are enrolled in the full-time MPH program. Graduate enrollment at the SPH has been gradually declining since 2013. The SPH speculates that this decline is attributed to such factors as increasing tuition costs, competition from other schools and public health programs, and an improved job market for recent college graduates. Undergraduate students make up a smaller, but growing population at the SPH. The undergraduate

major formally began in Fall 2014, while the undergraduate minor has been offered since 2010. The SPH employs approximately 70 faculty, with plans to hire new faculty and researchers over the next five years.

Population Description

The population for this study consisted of undergraduate majors and minors enrolled at the SPH. Understanding these students' experiences and characteristics will help inform policies and procedures as the SPH develops new programs and continues to grow its existing undergraduate population. As of Fall 2016, the SPH is home to 59 undergraduate majors and 206 traditional master's students. Enrollment in the undergraduate major by class is as follows:

- Freshmen – 14
- Sophomores – 13
- Pre-juniors – 5
- Juniors – 17
- Seniors -10

In addition to degree-seeking students, 39 students are pursuing a minor in public health. Over 60% of undergraduate public health majors at the SPH identify as non-White, while 80% of the students are female. Students enrolled in the undergraduate minor show similar rates of diversity, with 61% identifying as non-White and 86% as female.

Research Design and Rationale

This mixed-methods case study utilized a sequential transformative approach. According to Creswell (2014), mixed-methods research combines both quantitative

and qualitative data into one study. In this study, unequal priority was given to the data-collection methods, resulting in a qualitatively dominant study. A mixed-methods approach was appropriate since the research compared measurable data points, such as frequency of participation in SPH programming, satisfaction with SPH services, and demographic information. In a sequential transformative model, the researcher first conducts quantitative research and builds upon the results with qualitative research (Creswell, 2014; Hanson, Creswell, Plano Clark, Petska, & Creswell, 2005). Qualitative data collection provided the study with more in-depth context for student and faculty experiences. An advocacy-based approach was also helpful, as the results have the potential to influence future policy and best practices, particularly by gaining a "deeper understanding" (Hanson et al., 2005, p. 224) of students' experiences.

As a case study, this research concentrated on the undergraduate public health program at a single SPH to provide an "in-depth description of a bounded system" (Merriam, 2009, p. 40). Yin (2013) asserts that case studies are preferred "in situations when the main research questions are 'how' or 'why' questions" (p. 2). Additionally, a case study was ideal because the researcher has little control over the behavioral aspects of the case and a strong "desire to understand complex social phenomena" (Yin, 2013, p. 4). Similarly, Stake (2011) argues that case studies provide the ideal research approach for researchers with a special interest in a particular topic. Stake (2011) also indicates that case studies are an "integrated system" (p. 2) concerned with people and programs, as evidenced in the population description and purpose statement for the present study. This case study allowed the

researcher to gain insight into a contemporary issue affecting a specific institution (Yin, 2013). Specifically, this descriptive case study will "describe a phenomenon (the case) in its real-world context" (Yin, 2013, p. 238).

Using simple random sampling, all undergraduate students enrolled in both the public health major and minor programs at the SPH had an opportunity to complete the electronic survey for quantitative data collection, while a subset of this population participated in the qualitative portion (Onwuegbuzie & Leech, 2007). Following the close of the electronic survey, random purposeful sampling was conducted to select students to participate in the follow-up focus group. According to Miles and Huberman (1994), as cited in Onwuegbuzie and Leech (2007), random purposeful sampling "adds credibility to sample when potential purposeful sample is too large" (p. 28). Due to limited participant availability and response, convenience sampling was utilized to reach the study's goal of 6-8 focus group participants (Onwuegbuzie & Leech, 2007). Finally, a subset of colleges and schools at the university was selected using crucial case sampling to aid in "bringing to the fore the phenomenon of interest" (Onwuegbuzie & Leech, 2007, p. 112). The study analyzed existing programming within these colleges and schools to help maximize student success and retention.

Research Methods

Using an advocacy-based sequential transformative approach (Hanson et al., 2005), this case study utilized a mixed-methods design, which allowed the researcher to gain a more in-depth and rich description of student experiences and other colleges' and schools' practices, as opposed to a purely quantitative or qualitative

approach (Yin, 2013). The initial electronic survey provided the overall background and context of undergraduate student experiences, which were further explained by the subsequent qualitative data collection. The student focus group was conducted after the electronic survey to further investigate key issues and findings. Finally, an assessment of existing programming at other schools and colleges at the university helped inform the practices currently in place at other units to maximize success and retention, particularly among diverse and at-risk populations.

Description of Methods

Electronic survey. Undergraduate students were invited to participate in an electronic survey that included both closed- and open-ended data points to help inform the subsequent qualitative data collection. An electronic survey allowed students to access the instrument virtually and complete it at their leisure. The electronic survey was accessible via Qualtrics, an online survey platform.

Instrument description. The electronic survey was modified from the National Survey of Student Engagement (NSSE). Developed in 2000 and updated in 2013, the NSSE survey (2016) "assesses the extent to which students engage in educational practices associated with high levels of learning and development" (). The NSSE survey (2016) collects data related to the following points:

> 1) Participation in dozens of educationally purposeful activities, 2) institutional requirements and the challenging nature of coursework, 3) perceptions of the college environment, 4) estimates of educational and personal growth since starting college, and 5) background and demographic information.

The survey was modified using language specific to public health and the SPH's programming. Other questions and prompts were included depending on the

participants' status as a public health major or minor. A copy of the electronic survey is included in Appendix A.

Participant selection. Using a simple random sampling method (Onwuegbuzie & Leech, 2007), the survey was distributed to all undergraduate majors and minors at the SPH. At the time of implementation, the survey was sent to 98 students. The survey received 19 completed responses.

Identification and invitation. Undergraduate public health students received an email introduction to the study and a link directing them to the survey. A copy of the email introduction is included in Appendix B. The survey remained open for two weeks, with a reminder email sent after one week. As an incentive to complete the survey, students were entered into a raffle to win a $25 Amazon gift card. Student responses and comments were kept confidential, and only those interested in being selected for the gift card incentive provided their name and contact information. Students with an interest in participating in the subsequent focus groups also had the opportunity to indicate their interest in doing so.

Data collection. Data from the electronic survey was collected via Qualtrics software. Upon completion of the two-week survey window, data from Qualtrics was uploaded to SPSS for further analysis. The Qualtrics survey and responses were stored on a password-protected, cloud-based server.

Focus group. The study incorporated a focus group to gather more in-depth qualitative data on student experiences in the SPH. The focus group was conducted approximately three weeks after completion and analysis of the electronic surveys. A

focus group approach provided rich data for the study through student feedback, which could "confirm or disconfirm preliminary findings" (Creswell, 2015, p. 208).

Instrument description. Ten semi-structured questions guided the focus group discussion. The researcher asked subsequent or probing questions on a case-by-case basis depending on student responses. A copy of the focus group questions is included in Appendix C.

Participant selection. Using random purposeful sampling (Onwuegbuzie & Leech, 2007), undergraduate students were initially invited at random to participate in follow-up focus groups. Following the random purposeful sampling, other invitations were extended using convenience sampling (Onwuegbuzie & Leech, 2007). All undergraduate majors and minors received a numerical assignment from 1 to 98 to represent the total number of students enrolled in the major and minor at the time of the study. This sampling format offered more in-depth feedback and grounding for the initial research questions and survey results.

Identification and invitation. Students were invited to participate based on whether their assigned number was generated using a web-based true-random number service. Based on student availability and the goal of having 6-8 participants, convenience sampling was utilized to yield a total of seven student participants, six public health majors and one public health minor, all of whom were female. Food and refreshments were provided for participants as an incentive. Students signed a consent form ensuring their anonymity would be maintained and granting the researcher permission to record the session.

Data collection. With participant permission, the focus group was recorded

using an iPhone. The researcher also recorded descriptive and reflective notes during and following the focus groups. Sixty minutes were allotted for the focus group, but the session ran nearly 90 minutes. The audio-recording was downloaded and stored on a password-protected computer, along with a Microsoft Word document of the recorded field notes. The focus group was fully transcribed into a Microsoft Word document, which was also saved on a password-protected computer. The full focus group transcription yielded 24 pages of data. An additional copy of the focus group recordings and transcriptions were backed up onto an encrypted hard drive.

Inventory of existing college/school-based support programs. The study assessed existing support programs in place at other colleges and schools at the university. Established support services at the school and college level can help inform best practices if the SPH chooses to develop similar programming for its undergraduate students.

Instrument description. A checklist of key programming as informed by the literature review was noted for comparison colleges and schools. Key programming included but was not limited to learning communities, faculty mentorship, service-learning, and research opportunities. A copy of the inventory instrument is included in Appendix D.

Participant selection. Colleges and schools were selected based on enrollment in campus-based undergraduate programs. Select colleges and schools at the university enroll only graduate, professional, certificate, or online students, and thus were not appropriate for this study.

Identification and invitation. Using critical case sampling (Onwuegbuzie &

Leech, 2007), nine colleges and schools were identified for the inventory of student success and retention programming. These colleges and schools were selected based on their enrollment of on-campus undergraduate students and discipline-specific majors. The following colleges and schools were assessed for this case study:

- College of Business
- College of Arts and Sciences
- College of Engineering
- College of Nursing and Health Professions
- College of Media Arts and Design
- School of Biomedical Engineering and Health Systems
- College of Computing and Informatics
- School of Education
- Center for Hospitality and Sport Management

Data collection. Existing college and school programming was inventoried based upon information available on college and school websites and through emails to student services personnel. Using the checklist of student programming as displayed in Appendix D, brief descriptions of existing programs at these colleges and schools were recorded to triangulate the results of the electronic survey and focus groups. This document was stored on a password-protected computer and backed up onto an encrypted hard drive.

Data Analysis

The mixed-methods case study adopted a sequential transformative approach in a three-phase sequence:

1. Quantitative
2. Qualitative
3. Triangulation

Quantitative data from the electronic survey was analyzed in both the Qualtrics data report and SPSS. The data was stored on an encrypted, password-protected computer and backed up onto an encrypted external hard drive. Using SPSS, chi-square tests were performed to determine if differences existed between student levels of satisfaction and the key variables of frequency of participation in SPH events and frequency of interactions with faculty. These two variables related directly to the research questions regarding students' involvement and participation at the SPH and their relationships with faculty. Chi-square tests were appropriate because the variables related to rates of frequency (Ravid, 2011). Logistic regression analysis was performed to assess the impact of students' satisfaction with faculty interactions on the likelihood that respondents reported high satisfaction overall with their educational experiences at the SPH. Logistic models were adjusted for public health majors and minors. A one-way ANOVA test was run to compare the quality of faculty interactions and overall student satisfaction.

The focus group was audio-recorded using an iPhone with the participants' permission prior to the session. All student comments were kept confidential to encourage honest and open dialogue. The students' assigned numerical identifiers are used in communicating the data to maintain their anonymity. Following transcription, responses were coded to identify key themes and elements and aid in data analysis (Saldaña, 2013). The focus group transcription was coded twice, first using in vivo

coding and then using descriptive coding (Saldaña, 2013). In vivo coding captured the participants' own language, whereas descriptive coding was more summative of the discussion topic (Saldaña, 2013). The transcription and coding process allowed for a more thorough examination of the data and aided in the development of key findings and results. Creswell (2013) advocates for this interpretive phase to identify key themes and findings.

Following analysis of the findings, results were interpreted through a social constructivist lens, which is heavily influenced by participants' views and experiences (Creswell, 2013). Social constructivism focuses on the "specific contexts in which people live and work in order to understand the historical and cultural settings or the participants" (Creswell, 2013, p. 25). As such, direct quotes from the study participants are communicated in the study's findings and results.

The college and school inventory of programming notes how many colleges and schools institute formalized student success and retention programming. This triangulation phase allowed the study to corroborate evidence and enhance the study's accuracy (Creswell, 2015). Assessing existing programming at other colleges and schools at the university will "draw on multiple sources of information, individuals or processes" (Creswell, 2015, p. 259) to develop a more credible and systematic final report.

Data-Collection Timeline and Budget

The study budgeted a timeline of six months from the time of Institutional Review Board (IRB) approval. The following timeline outlines the study's implementation, analysis, and reporting.

Table 1
Research Timeline and Budget

Date	**Phase**	**Budget**
November 17, 2016	Proposal defense	NA
January 23, 2017	IRB approval	NA
February 1, 2017	Electronic survey distributed	$25
February 8, 2017	Reminder email sent to complete electronic survey	NA
February 15, 2017	Electronic survey closed	NA
February 16 – March 1, 2017	Quantitative data analysis	NA
March 7, 2017	Focus group conducted	$75
March 8-12, 2017	Focus group transcription	NA
March 13-17, 2017	Inventory of existing college and school programming	NA
March 17-April 5, 2017	Data coding and interpretation	NA
May/June 2017	Communication of findings and results	NA

As per the timeline in Table 1, the proposed research was successfully defended on November 17, 2016. Formal permission was obtained from the SPH's dean through a written letter. The study sought formal IRB approval as it involved human subjects. Because there was minimal to no risk involved for participants, it

qualified as an exempt study (Johnson & Christensen, 2012). After IRB approval was obtained, the researcher began the data-collection process, the timeline for which is displayed in Table 1. A budget of $125 was allocated as incentives for student participation. One student was randomly selected to receive a $25 Amazon gift card in appreciation for completing the electronic survey. Additionally, food and refreshments were provided for focus group participants at a cost of $75.

Reliability, Validity, and Ethical Issues

While many of the questions on the electronic survey were specific to student experiences at the SPH in the study, it is possible the results are replicable and applicable to other undergraduate public health programs (Golafshani, 2003). Using content validity, the electronic survey, focus groups, and program assessments were specifically tailored toward the research questions to accurately address the problem statement (Ravid, 2011). Creswell (2015) advocates for establishing credibility, transferability, and dependability through in-depth communication of the research methods and findings, which validate the study's results. All study participants received an introduction explaining the study's purpose and that they could opt out at any time.

Protecting and ensuring research participants' privacy was fundamental to this study. As students shared their feedback and opinions on faculty members, the researcher ensured the anonymity of comments to allow students the freedom to share openly and honestly without the fear that comments would be relayed back to faculty. Direct quotes are used in the communication of findings and attributed to students' assigned numerical codes to protect their anonymity. While the study's purpose was

to assess all students' experiences at the SPH, undergraduate public health programs at the SPH have traditionally attracted greater numbers of underrepresented minorities, women, first-generation college students, and other at-risk populations (Leider et al., 2015). During these focus groups, however, the study did not single out students who identified with one of these aforementioned groups (*Belmont Report*, 1979).

The highest ethical standards were applied in this study, with all biases suspended, particularly due to the nature of "backyard research" (Glesne & Peshkin, 1995, p. 31). Backyard research refers to research conducted in a setting in which the researcher holds an existing role. The researcher held many assumptions prior to the collection of data. The researcher presumed that students would be dissatisfied with their experiences with the SPH, particularly with their interactions with faculty. The researcher also assumed interactions with faculty and frequency of participation would be highly correlated with overall student satisfaction and students' career and graduate school plans. The study's results yielded helpful feedback and context for the SPH, but they may not be significant enough to influence policy or future developments in undergraduate education on a larger scale.

Summary

This chapter provided the foundation and framework for a mixed-methods case study on undergraduate education at a specific SPH. The methods outlined assisted the formal study development and subsequent data collection and interpretation. A mixed-methods case study provided measurable data, such as levels of students' satisfaction and quality of their interactions with faculty and staff, as well

as in-depth feedback through a student focus group. Assessing existing student support and retention programming at other colleges and schools at the university corroborated findings from the electronic survey and focus group on students' desires for a more inclusive environment. Understanding the undergraduate environment at the SPH will assist the school in developing additional programs and degree offerings, as well as creating the necessary support structures for students to thrive.

Chapter 4: Results and Findings

Introduction

This chapter summarizes the results and interpretations of this mixed-methods study, which sought to understand the experiences of undergraduate public health students enrolled in a graduate student-majority SPH. This case study adopted a mixed-methods sequential transformative approach in which initial quantitative data collection helped inform the collection of subsequent qualitative data. Additional data collection included an inventory of existing programming and other undergraduate student support systems in place at nine other colleges and schools at the university. This study was aided by the following research questions:

1. How do undergraduate public health students describe their experiences at the School of Public Health?
2. In what ways does the participation and involvement in School of Public Health activities affect undergraduate public health students' satisfaction?
3. How do undergraduate public health students perceive the role of faculty in their academic and professional development?

An online survey was distributed to all 98 undergraduate public health majors and minors at the SPH. Nineteen students completed the survey and shared feedback on their experiences, resulting in a 19% response rate. A subsequent focus group was conducted with seven undergraduate students. Of the 19 students that completed the electronic survey, 15 students identified as public health majors and four as public health minors. The students minoring in public health indicated their majors as Health Services Administration, International Area Studies, and Biology. All participants in

the electronic survey and follow-up focus group were female. Six of the participants in the follow-up focus group were public health majors and one was a public health minor majoring in Biology. Data on existing undergraduate programming and support systems was obtained from nine colleges and schools at the university through program websites and contact with student services personnel at these colleges and schools.

Findings

Electronic Survey

Results from the initial electronic survey indicated that overall, students were satisfied with their experiences at the SPH. Descriptive statistics were assessed through the Qualtrics report and SPSS. Inferential statistics were run in SPSS to determine the impact of variables like frequency of participation in SPH events, faculty interactions, and students' post-graduate plans on overall student satisfaction.

Classroom experiences. Both public health majors and minors reported frequent levels of participation in activities like classroom discussions and incorporating public health education and concepts into other coursework. Tables 1-7 indicate the distribution of these activities among respondents.

Table 2
Asked Questions or Contributed to Course Discussions (N=19)

Frequency	***n***	**Percent**
Very Often	7	36.8
Often	7	36.8
Sometimes	4	21.1
Never	1	5.3

Public health majors and minors also reported high frequencies in connecting their learning to societal problems and issues and appreciating diversity and inclusion.

Table 3
Connected Learning to Societal Problems and Issues (N=19)

Frequency	***n***	**Percent**
Very Often	13	68.4
Often	6	31.6

Table 4
Included Diverse Perspectives in Course Discussions and Assignments (N=19)

Frequency	***n***	**Percent**
Very Often	9	47.4
Often	10	52.6

Students also indicated having frequent interactions with people of diverse backgrounds based on race/ethnicity, economic background, and religious background.

Table 5
Had Discussions with People of a Race or Ethnicity Other Than Your Own (N=19)

Frequency	***n***	**Percent**
Very Often	15	78.9
Often	3	15.8
Sometimes	1	5.3

Table 6
Had Discussions with People of a Different Economic Background Than You (N=19)

Frequency	***n***	**Percent**
Very Often	13	68.4
Often	3	15.8
Sometimes	3	15.8

Table 7
Had Discussions with People with Different Religious Beliefs Than Your Own (N=19)

Frequency	***n***	**Percent**
Very Often	15	78.9
Often	1	5.3
Sometimes	3	15.8

Several five-point Likert-scale questions asked students to indicate the quality of their interactions with certain groups at the SPH, including fellow undergraduates, graduate students, faculty, and other administrative staff, with 1 being poor and 5 being excellent. Students could also choose a "not applicable" option. Feedback was overwhelmingly positive in response to the quality of interaction with their fellow undergraduates, with 78% (*n*=15) of students selecting option 4 or 5. Similarly, students rated faculty favorably, with 83% (*n*=16) selecting options 4 or 5. Students overall rated their educational experiences at the SPH as excellent (68%, *n*=13) or good (32% *n*=6).

Participation in events. Other questions assessed the frequency of student participation in SPH activities and events. Descriptive statistics were run in SPSS with students separated by major and minor. Additional inferential analysis was run to determine the effect of participation in these activities on students' overall satisfaction. Public health majors were more likely than minors to report participation

in SPH activities, with 59% of respondents (*n*=9) indicating that they often or sometimes participated in these events. Public health minors that responded (*n*=4) had never participated in these events. Table 8 displays students' perceptions of the SPH's emphasis on participating in school activities and events.

Table 8
The School of Public Health Emphasizes Participating in School Activities and Events (N=19)

Frequency	***n***	**Percent**
Very Much	6	31.6
Quite a Bit	7	36.8
Some	4	21.1
Very Little	2	10.5

Inferential statistics were run in SPSS to determine if participation in these activities and events was related to students' overall satisfaction with their educational experiences. Chi-square tests were run in SPSS to determine the correlation between frequency of participation in SPH events and overall student satisfaction. This test resulted in a *p*-value of .077, indicating that there is no statistical significance between frequency of participation in events and students' overall satisfaction. Results were also not significant when the top two responses, "very often" and "often," were grouped, demonstrating a *p*-value of .350.

Interactions with faculty. Questions 19 through 28 assessed student perceptions of SPH faculty. These questions focused on students' interactions with faculty both in and outside the classroom as quality of instruction. Student responses indicated that faculty communicated course goals clearly and taught courses in an organized manner, as evidenced in Tables 9-10.

Table 9
Faculty Clearly Explained Course Goals and Requirements (N=19)

Frequency	***n***	**Percent**
Very Much	10	52.6
Quite a Bit	9	47.4

Table 10
Faculty Taught Courses in an Organized Way (N=19)

Frequency	***n***	**Percent**
Very Much	7	36.8
Quite a Bit	11	57.9
Some	1	5.3

Faculty were also likely to use examples and other techniques to illustrate difficult points and concepts, with 79% of students (*n*=15) responding "very much" and 21% (*n*=4) responding "quite a bit."

Responses were mixed on questions relating to interactions with faculty outside of class. In regard to discussing graduate school or career plans with faculty, 36.8% (*n*=7) of respondents indicated they had done so "very often" or "often," whereas 63.2% (*n*=12) had "sometimes" or "never" spoken with faculty on these matters. One respondent reported working "often" with a faculty member on activities other than coursework, while most respondents had never done so, as demonstrated in Table 11.

Table 11
Worked with a School of Public Health Faculty Member on Activities Other Than Coursework (N=19)

Frequency	***n***	**Percent**
Often	1	5.3%
Sometimes	6	31.6%
Never	12	63.2%

Additional chi-square tests were performed to determine the significance between frequency of faculty interactions and students' overall satisfaction with their educational experiences at the SPH, as well as their post-graduation plans. No significant relationship was found regarding frequency of discussions on career plans and graduate school with faculty and whether a student planned to pursue employment (p=.563) or graduate training in public health (p=.066). Similarly, no significant relationship was found between frequency of working with faculty on activities outside of coursework and students' overall satisfaction. Quality of faculty interactions were also found to be not significantly correlated with students' overall satisfaction. Table 12 provides the chi-square variables and resulting p-values.

Table 12
Chi-Square Results

Independent Variable	**Dependent Variable**	***p*-Value**
Discussed graduate school or career plans with faculty outside of class	Plan to pursue employment in public health or a related sector	p=.563
Discussed graduate school or career plans with faculty outside of class	Plan to pursue graduate training in public health	p =.066

Worked with faculty on activities outside of coursework	Overall Student Satisfaction	p=.681
Discussed academic progress with faculty outside of class	Overall Student Satisfaction	p=.819
Discussed coursework with faculty outside of class	Overall Student Satisfaction	p=.359

A subsequent one-way ANOVA test was run to determine the relationship between quality of faculty interactions and students' overall satisfaction. Results from this test were also found not to be significant, with a p-value of .502.

Public health minors indicated that their interactions with faculty were largely positive, with 3 students selecting option 5 and 1 selecting option 4. Three public health majors selected option 3, 5 selected option 4, and 7 selected option 5. Logistic regression was preformed to assess the effect of the quality of these faculty interactions on the likelihood that students would report their experiences at the SPH were good or excellent. The model was first adjusted for public health majors and public health minors. The model for both groups was not statistically significant, with $X^2(2, N=15)=2.805$ for public health majors and $X^2(1, N=4)=.680$ for public health minors. When grouping all students together, the model was also not statistically significant, with $X^2(2, N=19)=1.54$.

Although interactions with faculty were not significantly related to students' satisfaction or post-graduation plans, most respondents indicated that they planned to pursue employment or graduate training in public health. Those who planned to

pursue graduate training in another discipline sought to study related professions, such as social work or clinical professions like medicine, veterinary medicine, or physician assistant training. Table 13 displays survey respondents' post-graduation plans.

Table 13
Response Frequencies, Post-Graduation Plans (N=19)

Post-Graduation Plans	***n***	**Percent**
Employment in public health	10	33.3%
Graduate training in public health	11	36.7%
Graduate training in another discipline	7	23.3%
Undecided	2	6.7%

Results obtained from the electronic survey indicate that public health students were satisfied with their overall educational experiences at the SPH. Participation in school activities and the frequency and quality of their interactions with faculty were shown not to have a significant correlation to students' overall satisfaction or post-graduation plans. Qualitative data obtained during administration of the electronic survey also indicated that students were pleased with their experiences at the SPH. One respondent commented, "I've enjoyed the experience and felt all of my professors have been influential in my educational experience." Another student echoed this sentiment, stating, "I think there are a lot of opportunities, resources […] provided at the School of Public Health. I love my peers

and faculty." Another student shared concerns about lack of cooperative learning opportunities and faculty that "compare us to the graduate level courses." This student went on to state that she was happy with her experiences, but that improvements could be made. The results from the follow-up focus group provided greater context for some comments, as well as deep, rich information for the SPH's undergraduate environment.

Focus Group

A follow-up focus group was conducted after the results from the electronic survey were cleaned and analyzed. In this sequential transformative case study, focus group results aided in providing additional information not collected in the quantitative data phase. The seven student participants all agreed that they were happy with their experiences at the SPH. However, several key themes emerged from analysis of this focus group, which provides helpful context for the climate of undergraduate education at the SPH.

An exploratory program. Focus group participants shared that they enjoyed the exploratory nature of the public health discipline. Students indicated that the program allowed them to "figure it all out" while simultaneously exposing them to relevant materials and skills. Students praised several faculty members for introducing them to course topics and materials that were "eye-opening." Conversations also revealed that students were highly passionate about the field. Participants represented a mix of students who had always been drawn and exposed to public health as a discipline, as well as those who had transferred from other majors, namely biology or the pre-medicine track. For the purposes of

communicating these results, all students are referred to here by their numerical identifiers to protect anonymity.

Two participants, Students 26 and 50, were originally biology majors upon enrolling at the university, but they switched their majors to public health upon realizing that "there was more of a human aspect to it […] I really appreciated the weeks on community health and prevention, and I felt that was more applicable to any sort of career than learning about protein pathways" as noted by Student 26. Similarly, Student 64 had been interested in microbiology but "wanted more social implications in regards to […] learning about health, improving other people's access to health, and better health outcomes." This student also noted the "exploratory" nature of public health and appreciated the major's interdisciplinary focus and how it can be applied to other classes. She noted,

> I just took a world religions class that had a lot of health integrated within it, as well, and just how health disparities are between different cultures, different regions, and so on and so forth, and I think that's what really drew me to public health.

Student 17, a pre-med biology major and public health minor, planned to integrate her public health background into her medical studies. Other focus group participants indicated that they had been exposed to public health throughout their lives, with Student 1's father being a public health professional and Student 54 discovering public health through an independent-study project in high school. Likewise, Student 52 had been drawn to public health through a high-school science club. Student 52 commented,

> I've always been interested in, like, the mixture of science and policy and behavior, so I participated in the science research club when I was in high school, and I was really, really drawn to kind of the behavioral science

projects."

These students also commented on their appreciation of the "people" aspect of public health and the broad, exploratory nature of the program. Student 54 chose the university specifically because students did not have to choose a public health focus within the program. She noted,

> I'm from North Carolina originally. Everyone really pushes UNC Chapel Hill and they have a fantastic public health program, and I went on their application, right, when I was applying to colleges and, it says, "Choose a concentration," and I was like, "No, I do not want to do that yet. I do not want a path that I have to go into straight away, I want to be able to explore my options."

This ability to explore public health and exposure to several different classes and experiences were cited throughout the focus group in various ways. Students additionally expressed a strong desire to explore their interests through research or practical learning experiences.

Relevant and specific. The exploratory nature of the public health program allows students to be exposed to numerous aspects of the discipline. Students also reported appreciating that "it's very specific at the same time" (Student 54). Student 1 echoed this sentiment, saying, "the public health electives, like, it's more specific," noting that courses such as Burdens of Disease and Drugs and Society provided relevant and timely course material. Other students noted the relevance of the course material and praised certain faculty who presented these timely course topics in an interactive classroom environment. Student 54 said her Public Health 101 professor was "amazing." She commented,

> The professor made it really interactive. It was, um, right around the time that the soda tax was being rolled out, so I remember we had a whole discussion one day about the soda tax, and there was a lot of interaction with current events that I really enjoyed.

Student 52, who was enrolled in the same course, noted,

> You weren't exposed to this stuff in high school, so it was like a whole new kind of topic to me, all these different parts of public health, but she did a great job of introducing us to all of them.

Students appreciated the ability to view public health issues in real-time through these courses, and they were exposed to diverse course topics and perspectives, as indicated in the next section.

"Eye-opening." Students routinely referred to their public health coursework as "eye-opening." Student 1 indicated that the course Drugs and Society "completely changed my perspective on drugs and drug users." Likewise, Student 17praised her instructor and the course Reproductive Justice, noting,

> I just loved that course because I learned a lot about not only the laws surrounding abortion and women's rights, like the FMLA. There was also one lecture that was taught by a person of the LGBTQA community, and they said how their experience was going transgender, and it was just really eye-opening.

Reflecting on her experience in Drugs and Society, Student 1 said,

> I saw somebody that looked like they were overdosing and I almost went into like "Drugs and Society mode" and, like, wanted to see their pulse and, like, scream into their face and make sure that they're responding, and, like, that course, had I not taken that course, there's no way that I would have reacted that way to that situation.

Student 64 echoed these sentiments in discussing her Health Economics course, saying,

> I never really realized that health econ would be the econ that is promoting health and sustainability […] It's completely changed my path and my interests and what I thought I was interested in, um, so much so that I'm almost positive that I'm going to be doing Health Policy for my master's, so I'm really excited about that. It's a special topics course. It's not even a course that's, um, demanded of us in our curriculum, and I think it's so crucial that I was able to explore that.

Public health passion. Focus group participants expressed a love of and passion for public health, particularly social justice issues such as women's health, marginalized populations, and mental health. Student 64 aptly stated that "public health is ultimately doing the things you're passionate about." This passion relates to the "human" and "people" aspect that has drawn students to pursue public health as a major or minor. Although only a freshman, Student 52 stated,

> I like being with people, I like working with them […] I've even found that I like being with people more and, like, talking about their behavior and, you know, what they're thinking, and I think, um, the more that you are with people and in front of people, the more you can learn from them and then help implement policy around the community to promote health.

Student 64 was interested in a range of social justice issues, such as maternal and child health and working with intravenous drug users. Student 26 planned to pursue a Master's in Social Work (MSW) following her undergraduate degree to "bring the voice of marginalized people into light." This passion and drive for the profession was also demonstrated in responses to the electronic survey when students were asked about their post-graduation plans. These results are in keeping with Resnick et al.'s (2017) study that demonstrated students' attraction to public health is based on the values of social justice and a "desire to work with vulnerable populations to address unmet community needs" (p. 7).

Students regularly cited certain instructors as helping them find this passion for public health. Student 17, minoring in public health, declared the minor after meeting with the undergraduate program director, saying, "I just fell in love with her and the public health realm." Students 52 and 54, both freshmen, had only taken Public Health 101 at the time of this study, but they referred to the instructor as

"amazing" and also praised the teaching assistant (TA), an MPH student, who "really helped us a lot." Students 26 and 64 praised another instructor as "amazing," with Student 26 saying,

> She's the best! She comes in and she, like, talks to you like you're an actual human and not scum of the earth undergrad. Um, she's just, I don't know, she will deviate from the syllabus but in a good way, like to explore topics that are of interest to us, and all of the guest speakers that she's brought in have been fantastic.

While students have had highly positive experiences with certain instructors, these instructors were doctoral students and not full-time faculty. These findings are consistent with data collected in the electronic survey, which asked students to indicate the faculty member that had had the most influence on their time at the SPH. This question was optional, with 17 of the 19 participants responding. Of those who named specific instructors, seven cited doctoral student instructors, while six named the program's undergraduate advisor, who is not a faculty member. Another respondent, in addition to naming the undergraduate advisor and doctoral student instructors, also named a graduate student TA as influential.

Undergraduate students have clearly benefited from the exploratory and interdisciplinary nature of public health, yet they also noted several challenges. At a high level, the undergraduate public health program delivers relevant and timely coursework taught by passionate faculty, but program infrastructure prevents and discourages students from pursuing their interests to full capacity.

Program infrastructure. Although the previous section highlighted several positive experiences for undergraduates, respondents expressed administrative frustrations, and challenges persist for this population. Public health classes lack

flexibility in terms of scheduling, and students reported major inconsistencies between online and on-campus courses. Although certain instructors received high praise, students also reported having negative experiences with faculty, noting disorganized teaching styles and a lack of communication or course expectations and assignments. Additionally, while the undergraduate major requires a cooperative learning experience, students noted a lack of opportunities in comparison to their peers in other majors.

Inconsistency in courses. Students noted major inconsistencies with the delivery and instruction of certain courses, particularly those offered online. Student 1 commented,

> I've had so many problems with the online courses. I don't know what it is; like, every time I take an online course, it's such as disaster and it's terrible because I was so excited for Social Determinant,s because you constantly hear about social determinants of health in all of your public health courses.

Student 64 also took Social Determinants online with the same faculty member during another term and noted,

> We took this class in the summer, and I am still talking about it, and I don't just mean like in my social group. I mean, like, I just met with the department chair and talked about my issues with it with him.

Students noted that the Social Determinants of Health class was also offered in-person, and according to Student 1, "people who take it in class get so much more out of it, and then you're the online person and you're like, 'Damn, I didn't learn anything.'" Student 50 completed the same course in Fall 2016 and said, "We had like the exact same problems. Everything you said was exactly what happened to us in the fall, so I guess it was like a rerun." After Student 50 noted her negative experiences with the instructor in the Social Determinants class, Student 64 expressed

shock, saying, “They, they let her teach it again?!? See, that is so bad. That is so bad. I feel like I just threw money in the trash can.” Students continued to voice concerns about other online courses, such as Global Health, which Student 64 said was “atrocious, too.”. Student 17 noted, “I took it 2 years ago, and he messed it up then, too,” indicating a possible lack of evaluation of instructors and online courses.

Course scheduling. Students also noted that scheduling their public health classes was challenging, as courses are only offered on Tuesdays and Thursdays, with few offerings in the summer. Student 50 explained, “Summer doesn’t offer many courses for public health majors, because I was trying to take more, but there’s only one.” Student 54 noted,

> When I was doing my schedule for this term, I definitely wanted to take some more relevant public health classes […] but at the same time, like, I’m also trying to get, like, a Global Studies minor, so I was trying to get classes for that in, but there were only very few that were offered in spring term, so it was very difficult to do my scheduling, so I ended up just having to take a public health class online.

Other students commented that certain courses were not offered in the appropriate sequence. For example, Student 50 commented, “The Comm Science Writing class, I think, just a suggestion, that it should be required in the first year or two of coming to school because of all of the research papers you do afterward.” Student 64 said, “If we’re supposed to be writing these reflective academic papers that are applying all the readings that we’re using, I personally don’t feel like I’ve had enough, like, applicable writing as far as being able to apply scientific concepts.” Further elaborating on the Science Writing class, Student 64 noted, “I’m, like, literally taking it I think summer during my co-op online so it’s like that’s not going to help me. Guaranteed,” once again noting the frustrations with online classes.

Faculty experiences and expectations. As noted in the previous section, students were highly complimentary of their instructors, but the majority of the instructors noted were doctoral students, not full-time faculty. In regard to full-time faculty, students reported mixed experiences and lacked clarity on course assignments and expectations. Student 26 commented that she had had faculty

> who basically make up coursework on the spot and you go into class and you don't know what's going to happen, because they don't know what's going to happen, and it, like, leads to this feeling where I have some classes that are amazing, and I have some classes that are terrible, and it's because the professor's not prepared.

Student 64 shared that her U.S. Public Health Systems class "was a little bit rough." She commented that the course had an excellent TA, but the professor "didn't really seem engaged in our education." During one class presentation, Student 64 asked for clarification on a graph, and the faculty member deferred to his TA. Student 64 said it created an environment of, "'Who is my professor?' And when you want your TA to write your recommendation but not the professor, that was kind of a problem." Student 26 commented,

> There are other faculty who just, like, I don't know, like, it's obvious that their priority is not teaching undergrads. Um, the current adjunct professor for Public Health Ethics, he has totally like disbanded the syllabus and redone it, he spends half the time, like, talking about Penn and his kids there […] It's very frustrating to be paying so much for an education and then to be getting faculty who don't provide us with, like, any, like, they provide us with material, but there's no pathway to learn and I find that really upsetting.

Other participants shared these frustrations and indicated that they lacked clarity on course assignments and expectations. Student 17 sought feedback from a faculty member on an assignment, but "they weren't receptive." Similar concerns were noted when some students indicated that they had submitted drafts of an

assignment to a faculty member, but "her [email] mailbox was full," so their drafts were never received, nor was feedback given. Student 50 similarly stated,

> You get hit with the final paper at the end and then it's, like, very difficult, and you don't realize that the professor is looking for a different level, like, professionalism than they were for the whole term for the class, and there's not like a straight rubric, so you're not exactly sure what they're looking for, and then you don't realize that you're not doing exactly the right thing.

Students also expressed frustration with the length of papers and number of readings for classes. Student 1 shared that the volume of readings for certain classes, while highly relevant, "is just above and beyond when you're doing, like, other courses, like Chemistry for me right now or some things like that that require a little bit more attention." Although students were frustrated with the volume of work, they found it "challenging, but totally doable," according to Student 50. Student 1, however, raised a key issue:

> A lot of the professors that we've had have had these amazing research projects that they've been a part of and, like, all these articles that they've released. And, like, when we're actually in the course, we're not really being taught how to do that, I guess. We're just kind of reading the coursework and writing a big paper at the end, but it's like, I want to, like, be able to see what the professor's done and sort of learn from that and apply that to my future. I don't want to just write a paper that I could be writing for an English course. I want to be writing something that's, like, sort of meaningful or will help me in my future in public health, you know?

Undergraduate public health students reported desiring experiences that allow them to explore their academic interests while pursuing specific and relevant material that will guide them in determining their career interests and goals. Unfortunately, undergraduate public health students voiced additional concerns that the program was not meeting those needs.

"Missing out." The theme of "missing out" resonated throughout many of the discussions on opportunities for undergraduate students to be involved with the SPH, both socially and academically. In addition to their frustrations with curriculum delivery and certain instructors, undergraduate public health students communicated not being aware of several SPH resources and experiencing general feelings of alienation and disconnectedness. Students voiced concerns on the minimal opportunities for cooperative experiences and a noticeable divide between the undergraduate and graduate student communities. Additionally, students acknowledged their lack of a voice within the SPH; as Student 1 noted during the focus group, "I'm missing out."

Undergraduate and graduate divide. In this study, the term "graduate students" refers to MPH students enrolled in the SPH's full-time program. As previously noted, this population makes up the majority of enrollment at the SPH. When asked to describe their experiences with the school's graduate students, 63% (n=12) of survey respondents selected "Not Applicable," indicating that they had had no interactions with graduate students. These results were echoed in the focus group, with Student 50 saying that her interactions with graduate students had been "very brief" and Student 1 saying, "I didn't even realize there were grad students until later on."

Students explained that many of the SPH's events and special activities catered more toward the graduate student population. Student 50 commented, "So, in terms of the guest lectures, I've always wanted to go, and it always coincides with a class somehow," circling back to the issue of undergraduate public health class

scheduling. Student 26 said, "I've gone to a couple of the Population Health Spotlights, which I really like. Some of the material is way over my head, which is kind of annoying." Student 64 commented on the events that she had attended, saying, "It wasn't really something that was targeted towards the undergraduate students, which I feel like is kind of a common theme […] You go and you're the only undergrad." Students 52 and 54, both freshmen, had attended some SPH lectures; Student 52 said, "I've noticed that I'm the youngest one there all the time, and I wish more undergrads came."

Students went on to voice their concerns about the divide between the undergraduate and graduate student populations. Student 26 commented,

> There's still a very big wall between grad and undergrad. There's never been, like, any real opportunity where it's like, "Hey, undergrads meet grad students," besides, like, mingling after events and, like, I'm not the type of person who will go walk up to a random person and make small talk.

Student 64 made a similar comment, saying, "We're creating these barriers that are unnecessary." Student 1 also expressed an interest in interacting more with graduate students, saying, "I wished there was a way that we could sort of like integrate the two schools a little bit more. Like, do some sort of MPH tea. I don't know, like, get to know those grad school students." As the majority population at the SPH, most events and services cater toward the graduate student population, leaving the undergraduates with the feeling of "missing out."

Disconnectedness from the school community. Focus group participants acknowledged the divide between the undergraduate and graduate populations and went on to express concern about feeling disconnected from the school as a whole. Many of these feelings were physical in nature. Student 50 noted,

> I've noticed that a lot of our public health classes aren't necessarily in this building. It makes me feel like public health doesn't actually have, like, a foundation. We have this nice building, but only have two or three out of the however many public health classes I've taken in the past 2.5 years in this building, and the rest are just randomly disbursed.

Student 54 shared a similar observation, saying that most of her public health classes had been in other buildings on campus, and "it doesn't feel like you're actually a part of the School of Public Health, you know what I mean?" These concerns are in line with challenges expressed by other undergraduate public health programs, which include the availability of classroom space and time slots (Resnick et al., 2017).

Student 54 went on to note that "I just feel like sometimes as undergrads, it's kind of like we're swept under the rug a little bit." Unlike the classroom facilities of some colleges and schools at the university, the SPH does not offer private study rooms for students to reserve, and the majority of common areas and other related study spaces are populated by graduate students. Student 64 described an experience in which she was studying alone in one of the lounge areas when a group of graduate students entered: "All of a sudden, you're swarmed in your, like, space and you're like, 'Whoa, guys!' If I were to ask them to be quiet, I'm sure that that would not go over well."

Students also noted not being aware of resources, special events, and programming available at the SPH. Student 1 said, "You don't really know whether they're [events] open to you or not. There's not really an emphasis from any of your teachers to go to these events." Student 50 discussed a Careers in Government event she attended and noted, "I didn't realize it was an MPH event. I thought that

undergrads could go." Student 26 agreed, saying, "I do wish, like, faculty would communicate more with us about events that are happening." Student 50 shared similar concerns, saying,

> I definitely feel like there's a lot going on that I don't know about. Like, recently, I've been trying to get more involved and trying to look for things on my own, but [...] I feel like there's so much that goes on, but it's not communicated to us.

This separation and alienation prevents students from fully engaging with the SPH and further contributes to undergraduate students "missing out" on a number of opportunities.

Lack of cooperative learning experiences. Finally, focus group participants noted a significant disparity between cooperative learning experiences for public health students versus other undergraduate students at the university. As previously noted, undergraduate public health majors have the option to participate in a cooperative learning experience as part of their degree requirements. This cooperative experience, typically completed for a period of three to six months prior to the junior year, allows students to gain practical, hands-on experience in their field of study. The undergraduate public health program allows for one cooperative experience, usually three months, whereas other majors at the university allow for two. Students are placed in cooperative sites through the university's Career Services Office, which lacks a significant number of public health-related experiences. Student 26 said,

> I did my co-op last year, and I did an independent search because there was nothing in the directory that interested me. My friends who are in my year, they just went through what career services offered and they ended up in really bad co-ops.

Student 1 echoed these concerns, saying,

> When I look at the system and I see that we have such limited public health options, but there's such a wide array of other options for the other schools like engineering […] it upsets me because I only have one co-op.

Like Student 26, Student 1 had secured her own cooperative experience outside of the Career Services Office. Student 54 also noted the disparities between public health experiences and those of other majors:

> I have a friend who is a nursing major and she pulled up hers [cooperative learning] in the database, and there's like this big long list and she's scrolling and scrolling and scrolling. She pulls up mine, and she's like, "What, there's just six for public health?"

These feelings of "missing out" not only affect undergraduate public health students in the classroom and SPH community, but they have impacted undergraduate students' ability to have meaningful cooperative learning experiences, which is central to the missions of both the SPH and the university. Undergraduates indicated that they were unaware of many activities and events at the SPH, and those they did attend skewed heavily in favor of the graduate population. Students awarded high praise to certain instructors and teaching assistants, but as noted, these instructors were doctoral and master's students, not full-time faculty. Following the focus groups, existing undergraduate student programming and related activities were inventoried from nine colleges and schools from the university. The next section discusses the results of this inventory and how existing programs at other colleges and schools can help inform the development of additional support systems for undergraduate public health students.

Inventory of Existing College/School-Based Support Programs

An inventory of key undergraduate programming, as noted in the literature review, was obtained from nine colleges and schools throughout the university. This

programming is tied to student success and retention and includes such activities as learning communities, faculty mentorship, and service-learning activities. Other noted activities include peer-mentorship programs, in which undergraduates receive mentoring and guidance from upperclassmen, and the ability to conduct research in specialized college or school labs, such as the Food Lab in the Center for Hospitality and Sport Management. Table 14 displays the inventory of existing student support and retention programs at the colleges and schools noted.

Table 14
Inventory of College and School Undergraduate Support and Retention Programming

College/School	Learning Communities (Y/N)	Faculty Mentorship (Y/N)	Service-Learning (Y/N)	Other
College of Business	Y	Y	Y	Includes special learning communities for underrepresented students.
College of Arts and Sciences	N	N	Y	Peer mentors, faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty. Community-based learning courses
College of Engineering	Y	Y	Y	Includes special learning communities for underrepresented students. Peer mentors

College of Nursing and Health Professions	N	N	N	Clinical experiences required. Faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty.
College of Media Arts and Design	N	Y	N	Faculty mentors that provide academic support and connections to industry contacts
School of Biomedical Engineering and Health Systems	N	N	N	Peer mentors, faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty.
College of Computing and Informatics	N	N	N	Peer mentors, faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty.
School of Education	N	N	N	Faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty.
Center for Hospitality and Sport Management	N	N	N	Faculty mentorship is unofficial. Students pursue their own mentorship and research opportunities with faculty. Students also can conduct research/experiment in the Center's Food Lab

As noted, the Colleges of and Engineering have the most robust support systems in place for undergraduate students, including specialized learning communities for underrepresented students. These colleges also match incoming freshmen with sophomores to ease their transition to the university through peer mentorship. Similar peer-mentoring programs can be found in the College of Computing and Informatics and the School of Biomedical Engineering and Health Systems. The Colleges of Business and Engineering also offer a scholars' program in which students can participate in paid faculty-mentored research the summer following their freshman year. The learning communities at both colleges allow freshmen to live in the same residence halls to provide an optimum living and learning experience.

The College of Media Arts and Design has designated faculty members in each department that serve as mentors to undergraduate students. These faculty mentors provide students with course tutoring and advising, as well as connecting students to industry contacts. Other colleges and schools have more informal opportunities to work with faculty, and peer-mentorship programs are also available at the School of Biomedical Engineering and Health Systems and the College of Computing and Informatics. The College of Arts and Sciences also offers a unique set of community-based learning courses in three formats. Side-by-side courses allow students to complete courses with community members, community hybrid courses are completed simultaneously in a traditional classroom environment and in the community, and service-learning courses provide students with community service opportunities in addition to traditional credit hours. The College of Arts and Sciences

partners with several community organizations and nonprofit institutions where students can complete community-based learning activities.

The SPH has an extensive network of community partners where faculty have conducted research and collaborated with community members. Additionally, these partners serve as practice sites for master's students. However, as participants in this study noted, undergraduate public health students lack the appropriate connections to these organizations, as their cooperative sites are minimal. Furthermore, undergraduate students possess a strong desire to explore these partnership opportunities in both volunteer and cooperative learning capacities. Most importantly, undergraduate public health students also expressed a strong interest in working more closely with faculty in a mentorship capacity and through research collaboration. The following section discusses the major results that emerged from this study and the supporting research.

Results

Despite numerous concerns expressed through the focus groups, students indicated that they were satisfied with the SPH program, but that improvements could be made. As Student 64 stated, "I've had downfalls, but I'm still really, really thankful for this program." The key results that emerged from the electronic survey, focus groups, and undergraduate programming inventory from other schools and colleges reflect students' desires for two significant support and development activities, as noted in the literature review: 1) Mentorship opportunities, and 2) service-learning and practice experiences.

Mentorship Opportunities

As noted in the literature review, contact with and support from faculty both in and outside the classroom have been demonstrated to positively impact student retention and satisfaction (Tinto, 2006). Tinto (2012) notes that many freshmen enter college unsure of their long-term goals, which will be viewed negatively by faculty. Students cited the exploratory nature of public health as crucial to helping them determine their potential academic and professional goals, yet the appropriate connections to faculty and master's students are lacking. Focus group participants noted an interest in connections and mentorship opportunities with both faculty and MPH students.

Faculty mentorship. Student 64 said that she had met faculty members who she "would love to be my mentor," indicating a desire to be coached and mentored by senior faculty. However, researchers note that developing relationships with faculty can be difficult for students (Astin, 1999; Gibson & Willison, 2011). This difficulty is coupled with a lack of awareness and access to senior faculty. The results of this study's survey also indicate a lack of faculty mentorship, with 63.1% (n=12) of respondents having never worked with a SPH faculty member on activities other than coursework. A disconnect between undergraduate students and senior faculty also has implications for course quality control. Student 64 noted that in regard to her challenges with the Social Determinants of Health professor, she was unaware of the appropriate pathway to express these concerns. She indicated,

> I complained to my academic advisor all term, but apparently, I was supposed to be complaining to the chair, but it's like, we're not told that that's how that pathway works. And not to mention, it's very intimidating to go to the chair of the department where, like, in my position, I'm just about to pursue my master's. He very well could be my mentor.

In this case, the student was intimidated to voice relevant concerns about her classroom experience, feeling it may have jeopardized her opportunity to be mentored by senior faculty.

Mentorships with faculty are also attributed to increased degree persistence and completion (Straw, 2014). Student 1 noted not being aware of the research being conducted by SPH faculty; she expressed an interest in several faculty research projects. She commented,

> I remember studying and seeing all these people walking back and forth and thinking, "I wonder what they're doing." But they're doing research! They're doing actual public health things and really relevant stuff out there […] like collecting data from Twitter. That's something, like, as a millennial I feel like I could help out with, you know?

Student 54 also acknowledged not knowing about faculty research; she said,

> I would love to, like, work with a professor and get my hands on some research during my undergrad, just so I can figure out what I want to do exactly. Like, maybe I'm really into working with numbers and data, but I don't know that until I try it.

Students cite being treated as junior colleagues as one of the most fulfilling and positive aspects of their academic experience (Girves & Wemmerus, 1988). Female students in particular benefit from these experiences (Baker, 2015). In addition to honing research and problem-solving skills, interactions with faculty outside the classroom has been shown to increase students' retention and satisfaction with their academic programs (Girves & Wemmerus, 1988; Kim-Prieto et al., 2013; Kraska, 2008). In this study, Student 64 aptly noted,

> What harm is it having undergraduate students fostering research at a research university? It's like, if anything, you're just promoting these skills and capabilities in people at a young age, which can only advance them in the field, and that's [Research Site] undergraduates advancing in the research field.

Faculty involvement and guidance through mentorship and undergraduate research experiences has proven to be a highly effective retention strategy that allows student to build an academic identity (White & Lowenthal, 2011). Undergraduate public health students clearly value the exploratory nature of the discipline, but they desire stronger connections to faculty to help them better gauge their professional interests and goals. While Tinto (2012) argues that many students enter college unsure of their long-term educational or professional goals, faculty view this indecisiveness as a "deficiency rather than a natural part of their personal and intellectual growth" (p. 41). For faculty unable or unwilling to foster and mentor undergraduates, graduate students can perhaps fill this void.

Graduate student mentorship. Mentorship is not exclusive to senior faculty. As students noted in the electronic survey and the focus group, they had had highly positive interactions with doctoral student instructors and MPH TAs, which could provide an excellent breeding ground for mentorship. Students delivered high praise of the MPH TAs, and some noted their TAs as influential faculty members on the electronic survey. Students indicated that they viewed their TAs as mentors; Student 64 said,

> He [the TA] just knows everything about everything and he has such a non-biased view […] He's reviewed my resume, he helped me construct my resume, which was really nice. It's less intimidating of, you know, an individual to go to than if you go to your professor.

Student 64's comments are in line with existing literature that indicates that some students, particularly those from disadvantaged backgrounds, are intimidated by and less inclined to seek help from faculty (Pike & Kuh, 2005). Regardless of

whether a student identifies with an underrepresented group, establishing appropriate support systems in and connections to the academic community can help integrate undergraduate students and alleviate some of their feelings of being "swept under the rug."

As indicated in the inventory compiled for this study, peer-mentorship programs are currently offered at four of the nine colleges and schools surveyed. Peer mentorship is defined as a "relational process whereby a more experienced individual, usually more senior contributes to the professional development of a protégé by providing career-related support and role modeling" (Wang, Tomlinson, & Noe, 2010, p. 358). While the peer mentors at the other schools and colleges at the research site are staffed by upperclassmen in these majors, typically sophomores and higher, the undergraduate student population at the SPH is smaller by comparison. In this case, SPH graduate students could assume mentoring roles for undergraduates.

Existing research argues that peer mentoring can have a significant impact on undergraduates' learning and academic success (Asgari & Carter, 2016). Peer mentors can "enable students to believe that they are cared for and that their success matters" (Asgari & Carter, 2016, p. 131). Although Asgari and Carter (2016) argue that undergraduates are less likely to view TAs as peers, the feedback gathered from the focus group in this study indicates that undergraduate public health students viewed their TAs as mentors, having sought both academic and career advice from them. As graduate students are closer in age and academic status than faculty members to undergraduates, undergraduates "may receive additional benefits by being mentored specifically by graduate students" (Weigel, 2015, p. 16). Regardless,

peer mentorship provides undergraduate students with a supportive environment that increases their confidence and abilities (Asgari & Carter, 2016).

Graduate students see similar benefits to mentoring undergraduates. As Weigel (2015) asserts, the future success of graduate students "will likely be tied to their ability to effectively and efficiently mentor students" (p. 14). Effective mentoring from graduate students helps cultivate diversity and increase research potential, while providing a "direct mechanism to benefit, grow and shape your field" (Weigel, 2015, p. 15). Mentoring undergraduates has also been demonstrated to increase research productivity and lead to the discovery of new and innovative research techniques and practices (Weigel, 2015). Likewise, undergraduates demonstrate improved academic communication skills, and they develop a greater understanding of the field (Weigel, 2015). Weigel (2015) goes on to note that through these mentoring and research opportunities, "attention paid to creating the next generation of scientists pays dividends to both the mentor and the field as a whole" (Weigel, 2015, p. 20). Honing skills as researchers allows undergraduate students to gain confidence in their academic and professional abilities. As undergraduate students noted in this study, however, these professional and research experiences are lacking at the SPH in question.

Service-Learning and Practical Experiences

As Student 54 noted in the focus group, "I would love to […] get my hands on some research during my undergrad, just so I can figure out what I want to do exactly." Research, service-learning, and cooperative learning experiences can help prepare students for "life, work and citizenship" (AAC&U, 2007, p. 36). Service-

learning and practical opportunities allow students to apply their academic skills in relevant settings while honing and developing their greater understanding of course content and cultural competency, among other benefits (Cashman & Seifer, 2008). Focus group and electronic survey participants alike expressed a dissatisfaction with the current opportunities, or lack thereof, at the SPH.

The upperclassmen focus group participants who had completed their cooperative learning experiences indicated that they had pursued their own projects independently of the Career Center due to a lack of offerings in the database. Student 1 expressed frustration with the lack of opportunities, saying,

> I feel like there's such a big disconnect sometimes with the neighboring nonprofit organizations that the university has some sort of affiliations with. I feel like we're just, I'm not making use of this city and of all the opportunities that are out there.

Student 6 agreed with the idea of connecting with nonprofits and other organizations, saying,

> I feel like that would be really, really helpful for the undergrad class when it comes to co-op. Because I know I did my co-op last year, and I did an independent search because there was nothing in the directory that interested me.

Because public health students only participate in one cooperative learning experience, maximizing on service-learning and related opportunities can allow for a greater breadth and depth of experiential learning opportunities. Student 64 noted,

> A lot of the professors and faculty are doing really, really innovative research and are doing something that spark the interest of students […] If there were co-op opportunities to be research assistants to professors […], there's so many students that would be interested in taking advantage of something like that.

As discussed in the literature review, research experiences, service-learning, and related opportunities help improve retention rates among underrepresented students and allow these students to hone relevant skills, such as publishing and presenting at conferences (Harsh et al., 2011).

While several student comments related to their cooperative experiences, students also expressed an interest in participating in activities outside curriculum requirements. Student 1 independently sought out a volunteer experience that proved to be highly rewarding:

> It was "Give Your Sight to Kids Day," or something like that, and it was at the Wills Eye Hospital, and um, basically, I was working as a translator there, and it was for people of low-income households. They were able to come in a get free glasses, free testing. It was phenomenal.

Student 1 learned about this event through an organization known as Public Health Youth Leadership Association (PHYLA). However, she also noted that she was the only student from the university in attendance, further highlighting the lack of association between the SPH and area nonprofits and related organizations. Student 1 aptly stated,

> I think there's so many opportunities for us, especially outside of co-op, for public health students, and I think that we need to kind of take ahold of that or be encouraged to go out and find these nonprofits that are in the city. It doesn't have to be paid.

This desire for increased opportunities to work in community settings is in keeping with national trends for undergraduate public health students. Resnick et al. (2017) found that undergraduate public health students are "'value driven,' embracing social justice and a desire to work with vulnerable populations to address unmet

community needs […] drawn to service-learning opportunities in local communities and globally" (p. 7).

Although most colleges and schools inventoried in this study do not offer formal service-learning or faculty mentorship programs, students in these colleges and schools have exposure to a wider network of cooperative learning and clinical experiences. The formal research and service-learning opportunities provided by the Colleges of Business, Engineering, and Arts and Sciences leave undergraduate students in these colleges well-positioned for their cooperative learning experiences and their eventual professional or post-undergraduate academic pursuits. Although the SPH boasts partnerships with over 200 area organizations, these partnerships are exclusive to the graduate student population. The availability of service-learning and increased practical experiences would provide undergraduate public health students with a more diverse skillset, preparing them for graduate-level public health work and eventual employment in the public health sector.

Summary

This study's findings and results suggest that although undergraduate students are satisfied with their experiences, additional improvements and specialized programming are justified. While participation and attendance at SPH activities and events was found not to be significantly related to student satisfaction, the current programming in place at the school does not appropriately target this population. Additionally, faculty interactions were not significantly related to overall student satisfaction and subsequent post-graduation plans, but students do desire increased interactions with both faculty and graduate students in a mentorship capacity.

Students also reported a lack of cooperative learning experiences and other valuable connections, such as research with faculty and volunteer and related opportunities with area public health organizations. The final chapter summarizes this study and offers recommendations to position the undergraduate public health program at the SPH for sustainable growth and improvement.

Chapter 5: Conclusions and Recommendations

Introduction

In keeping with the IOM's 2003 report advocating for undergraduate student access to public health education, a school of public health within a large, private, urban research university instituted minor and major programs in the discipline in 2010 and 2014, respectively. Prior to the formation of the undergraduate major and minor, this SPH offered only graduate degrees, the majority of students being enrolled in the full-time MPH program. Beginning in 2013, the SPH's graduate population began to decline. Additionally, the implementation of an RCM budget model requires the SPH to be increasingly cognizant of its enrollment and retention, particularly as undergraduate public health programs attract a significant number of at-risk populations (Leider et al., 2015). While the undergraduate population at the School of Public Health has increased, with continued growth projected, little was known about these students' experiences and satisfaction within their respective programs. With plans to increase undergraduate enrollment in public health, a greater understanding of student experiences will assist the school in developing a strategic plan specific to undergraduates and offer them the appropriate support to ensure their success.

Summary of the Study

This mixed-methods case study sought to understand undergraduate students' experiences in a graduate student-majority SPH. Using a sequential transformative approach, an electronic survey was distributed to all undergraduate majors and minors at the SPH, with a total target population of 98 students. The electronic survey,

modified from the NSSE, was open for two weeks, with a reminder email sent after one week. The survey received 19 complete responses, for a 19% response rate. Descriptive statistics, chi-square tests, logistic regression, and a one-way ANOVA were run in SPSS to test for any significant correlations between data points in relation to the research questions.

Following initial quantitative data analysis, a 90-minute focus group was conducted with seven undergraduate public health students. The data collected from the focus group was transcribed verbatim into Microsoft Word and coded with descriptive and in vivo methods. Existing student support and programming from nine colleges and schools at the university were also inventoried to triangulate the findings of the electronic survey and focus groups and inform best practices for undergraduate students at the SPH. The study sought to address the following research questions:

1. How do undergraduate public health students describe their experiences at the School of Public Health?
2. In what ways does the participation and involvement in School of Public Health activities affect undergraduate public health students' satisfaction?
3. How do undergraduate public health students perceive the role of faculty in their academic and professional development?

Summary of Findings

Findings from the electronic survey indicate that overall, undergraduate students are satisfied with their experiences at the SPH. Students reported frequently engaging in classroom discussions and finding that their classroom experiences were

highly relevant, giving them the ability to connect their classroom learning with societal problems and issues. Students rated SPH faculty favorably, with the majority of respondents selecting options 4 (31.58%, *n*=6) and 5 (52.63%, *n*=10) on a five-point Likert scale, with 5 being excellent. Students also rated their overall educational experiences at the SPH highly, with 68% (*n*=13) and 32% (*n*=6) selecting "excellent" or "good," respectively. Public health majors were more likely to engage in SPH activities and lectures, while none of the public health minors that completed the survey had ever participated in a school event.

The follow-up focus group provided even greater context for undergraduate public health students' experiences. Like the survey findings, students reported that they were pleased with the program; however, they faced a number of challenges. Students were highly passionate and motivated to pursue this field, yet they raised issues with program infrastructure, such as class scheduling; inconsistency in courses, particularly those offered online; and the availability of cooperative learning and other experiential activities. Students also indicated that many faculty approached their learning from the perspective of working with graduate students and were unfamiliar with undergraduate teaching and advising methods.

An inventory of existing student support and retention programming was obtained from nine schools and colleges at the university. The Colleges of Business and Engineering have the most robust student programming, with the College of Business offering specific support services to underrepresented students. Other colleges and schools offer community-based learning courses and other unique programs such as peer mentoring. Undergraduate public health students indicated a

strong desire for increased community and service-learning opportunities, in addition to a more diverse offering of cooperative learning experiences. Students also expressed an interest in mentorship and research opportunities with faculty.

How Do Undergraduate Public Health Students Describe Their Experiences in the School of Public Health?

Overall, undergraduate students at the SPH were satisfied with their experiences. Despite "downfalls," according to one focus group participant, undergraduate students remained passionate and motivated in their academic pursuits. As noted in Chapter 4, survey participants reported frequent levels of participation in classroom discussions and were engaged with course content, with 35% (*n*=7) of respondents indicating that they always went to class having completed course readings and assignments. Focus group participants appreciated the exploratory nature of public health as a discipline, hoping it would allow them to further hone and refine their future research interests and career goals. Additionally, participants enjoyed that public health provided them with relevant knowledge of real-world topics. These responses are in keeping with those from the electronic survey, in which participants indicated that they very often (*n*=13) or often (*n*=5) had been able to connect public health course content to societal problems or issues.

Undergraduate public health programs traditionally attract more women, underrepresented minorities, and other students from diverse backgrounds (Leider et al., 2015). In this SPH's undergraduate program, 60% of all students identify as non-White and 80% as female. Survey respondents and focus group participants valued public health as a diverse and inclusive program, indicating that they had been able to include diverse perspectives in their learning through interactions with people of

different racial/ethnic, economic, religious, and other backgrounds. Focus group participants highlighted experiences like a guest speaker who shared a gender-transition experience to recognizing economics as a public health issue.

Inconsistencies were reported, however, mainly in regard to program infrastructure, online classes, faculty, and cooperative learning experiences. Focus group participants noted that some courses, like Science Writing, were offered out of sequence. Additionally, other students expressed frustrations with online classes, saying that they were a "disaster" and that students who enrolled in the in-person version of the same course often received a higher-quality learning experience. Although faculty overall received high praise from students, most instructors that students named were doctoral students rather than full-time faculty. Other students commented that faculty lacked familiarity with teaching and working with undergraduate students. Undergraduate public health students possess distinct needs in comparison to master's students and require more specialized guidance and advising (Arnold et al., 2015). Undergraduate teaching also demands different methods and approaches, as well as a greater course structure (White, 2015). Study participants' frustrations indicate that some faculty have not adapted their course content and structure to account for these differences in learning between undergraduate and graduate students.

A lack of cooperative learning opportunities presented a challenge to undergraduate students, as well, who reported hoping to gain as much experience as possible in an effort to "figure it all out." Students also reported feeling physically and socially disconnected, as many of their courses did not take place in the SPH's

building, nor did they feel certain events and activities were appropriate for them. Focus group participants used such language as “scum of the earth undergrad” and “swept under the rug” in discussing some of their experiences at the SPH, further emphasizing this disconnect and feelings of alienation.

Regardless of these negative experiences, students reiterated their love for the program and for public health as a discipline, which relates to one of the research findings regarding a passion for public health. This passion for the discipline and the profession resulted in students pursuing and securing their own cooperative learning experiences outside the university’s official service, as well as seeking out community service and related activities not sponsored by the SPH. During the focus group discussions, it appeared that students were more influenced by the pursuit of non-SPH sponsored activities, such as PHYLA events.

In What Ways Does the Participation and Involvement in School of Public Health Activities Affect Undergraduate Public Health Students’ Satisfaction?

As noted in Chapter 4, no significant correlation was found between the frequency of participating in SPH activities and undergraduate students’ overall satisfaction, as assessed through the data collected in the electronic survey. Focus group participants noted that these events catered more toward the graduate student population, and undergraduates were inadvertently excluded due to classes often being scheduled at the same time. Students also remarked that very few undergraduates opted to participate in these events. Students noted that they lacked clarity on whether these events were open to undergraduates and that faculty did not promote or encourage attendance at these events, further emphasizing the disconnectedness between undergraduates and the academic community at the SPH.

Based on data collected during the focus group, and as noted in the previous section, student satisfaction appeared to be highly driven by their passion for public health as a discipline rather than by the SPH or program. Students shared that their most meaningful and satisfying experiences occurred when they were able to recognize public health in action, such as Student 1's experience witnessing an apparent drug overdose, as well as her involvement with PHYLA.

While SPH lectures and related activities skew heavily toward the graduate student population, undergraduate public health students may gain more meaningful and satisfying experiences by participating in community service or related activities such as those noted above. As discussed in the literature review, service-learning and other activities in which undergraduate students can apply their skills in a real-time setting have shown to be highly effective in increasing student satisfaction and a sense of belonging in the academic community (Ishiyama & Hopkins, 2003; Kabes et al., 2010). Through participation in these activities, students develop more positive views of the university and faculty, as well as an increased appreciation for their fellow classmates (Tinto, 1997). The integration of undergraduate public health students into the SPH community will become crucial as the school continues to grow the program and cultivate the undergraduate population into future graduate students and public health professionals.

How Do Undergraduate Public Health Students Perceive the Role of Faculty in Their Academic and Professional Development?

Based on analysis of the electronic survey data, no significant correlation was found between undergraduate students' interactions with faculty and their overall satisfaction with the SPH or their post-graduation plans. Sixteen respondents chose

options 4 or 5 when asked to rank faculty, with only 3 students selecting option 3 on the Likert scale. As noted, however, when asked to name influential faculty members by name, the majority selected doctoral student instructors. Other students named the program's academic advisor, who is a staff member, while another student named an MPH TA. Similarly, focus group participants also named doctoral student instructors and MPH TAs more frequently than full-time SPH faculty.

Although the relationship between the frequency and quality of faculty interactions was shown not to be significantly correlated with student satisfaction or post-graduation plans, both electronic survey respondents and focus group participants indicated that they planned to pursue graduate training in public health or employment in public health. Both survey respondents and focus group participants with an interest in pursuing graduate training in another discipline planned to do so in social work and clinical professions such as medicine or physician assistant training. While not public health per se, Student 26's plans to pursue an MSW were highly influenced by her experiences in the undergraduate public health program, particularly through learning about health disparities and disadvantaged populations.

This desire to pursue employment and graduate training in public health and to work with underserved populations is in keeping with the theme of a passion and drive for public health. Given that the frequency and quality of faculty interactions were shown not to be significantly related to overall satisfaction or career/graduate school plans, students' passion for the field and social justice issues was more influential on their persistence in the discipline. Because of the discipline's emphasis on social justice and human rights issues, students made a conscientious decision to

pursue the field of public health regardless of the availability of faculty or other resources. Students proactively sought opportunities to gain experience in this realm, as noted with Student 1's experiences with PHYLA.

At a higher level, instructors were influential in helping undergraduate students discover their passions for public health and ultimately their career interests and goals. However, these instructors were doctoral students, not full-time faculty. As previously noted, focus group participants independently sought their own cooperative learning experiences in addition to extra-curricular activities to help them hone their interests in public health. Students also expressed frustration about a lack of awareness of faculty research and how they could potentially be involved in such activities in an effort to help them better refine more specific public health interests.

Colleges such as those of engineering and business have robust undergraduate student programming that connects students to both faculty and peer mentors. The College of Arts and Sciences' community-based learning courses and connections with area businesses and organizations allow their students to gain meaningful learning and practice experiences. While other colleges and schools inventoried have unofficial faculty mentorship opportunities, these colleges and schools also enroll a significant number of undergraduate students, whereas the SPH's undergraduate population is still fairly new. Undergraduate public health students clearly have the passion and drive to succeed, which can be further enhanced by developing similar support services. The next section provides recommendations for the SPH to better cultivate undergraduate students.

Recommendations

Although no statistically significant correlations were found in the initial electronic survey data analysis, data collected from the focus group participants provided a greater context for undergraduates' experiences at this SPH. While this study was specific to one school of public health, as undergraduate programs in this discipline continue to grow, additional studies of undergraduate public health students can inform best practices and position programs for sustainable growth. Although some of the following recommendations may take some time to implement, others, particularly those that relate to social integration are highly actionable, and can be realistically instituted in the near future.

Social Integration

To combat the feelings of disconnectedness and being "swept under the rug," the SPH should develop programs and activities to integrate undergraduate students into the community. As noted previously, a more conscientious effort to incorporate undergraduate students into school communication and social events can be acted upon immediately. If the undergraduate program continues to grow, these programs will become crucial in helping students to form their academic identity. As Strayhorn (2015) notes, this sense of belonging is context-specific and although students may feel at home within the larger university, a lack of connectedness to their academic departments can have negative consequences for students' motivation and satisfaction.

Focus group participants indicated a lack of clarity on what events and activities were open to them as undergraduates. An undergraduate-specific e-

newsletter with information on upcoming seminars, meetings, and related activities could eliminate confusion about what events are open to undergraduates and encourage their participation. Undergraduate students receive the SPH's general student services newsletter, but they do not receive the school's Student Government Organization (SGO) weekly newsletter that highlights upcoming events and activities. With this disconnect in SPH communication, it is understandable that undergraduate students are unaware of which events are open to them. The immediate implementation of an undergraduate e-newsletter and the addition of undergraduate public health students onto the SGO list-serve could be highly effective in event promotion and encourage inclusiveness amongst the undergraduate population.

The Office of Student Services plans several events throughout the academic year that include career fairs, alumni networking opportunities, and professional development seminars. These events skew toward the graduate student population. The undergraduate program and the Office of Student Services could collaborate to offer more seminars and activities appropriate to the undergraduate population, such as tips and tricks for applying to graduate school, resume writing, and interviewing, as well as how to seek research and related opportunities. The SPH could also offer opportunities for undergraduates to interact with full-time and senior-level faculty through events like faculty giving guest lectures in undergraduate courses or a formalized lecture series specifically for the undergraduate program in which senior faculty present their research and practice activities. This effort can aid in building rapport between undergraduate students and senior faculty and allow students to interact with these faculty in a more casual atmosphere. Given that an infrastructure

for similar programming is already in place for the graduate population, implementing these special workshops, seminars and lecture series for undergraduate public health students can realistically be implemented in the short term.

Although the population of the SPH is small by comparison to other colleges and schools at the university, its graduate students are highly engaged and participate in many extracurricular activities, including department-specific organizations, journal clubs, intramural sports, and community service activities. The SPH's SGO assists in developing programming and activities for the graduate student population. The undergraduate program could collaborate with the Director of Student Services, the SGO's staff advisor, to explore including an undergraduate public health SGO representative to encourage and promote inclusion and involvement within this population. Proper communication and inclusion of the undergraduate population on SPH committees like the SGO can help assuage the sense of disconnectedness many undergraduates feel. Similar to the recommendations noted above, an undergraduate representative on the SGO could also be an immediate action item for the SPH as a means of encouraging a more inclusive environment for the undergraduate population.

Mentoring

Student mentoring has been frequently cited in the literature as a means of establishing a sense of belonging, increased satisfaction, and motivation among undergraduate students. Focus group participants also expressed a strong desire to work with faculty in a mentorship capacity or on research and related activities. The undergraduate public health program leadership could collaborate with full-time

faculty at the SPH to establish more formal and informal mentoring opportunities. Unlike the master's and doctoral student populations, undergraduate public health majors are advised by an administrative staff member, rather than full-time faculty. Like the College of Media Arts and Design, a pilot program of full-time faculty members serving as mentors to undergraduates can provide academic and professional guidance to these students. Particularly as the undergraduate program continues to grow, students identified as at-risk based on their admissions materials and background could be assigned to a faculty mentor during their first year to ease their transition. Faculty mentorship can be highly effective for undergraduate students, particularly females as noted by Baker (2015), although this initiative would require more thoughtful planning. With the appropriate support and buy in, faculty mentorship opportunities could be implemented within one to two years.

Mentorship opportunities can also extend beyond faculty to incorporate graduate students, as noted in Chapter 4. Study participants provided highly positive feedback in their interactions with graduate student TAs. Graduate student mentors, many of whom are close in age to undergraduates, can help foster connections to the SPH's academic community and aid in promoting collaboration between the undergraduate and graduate populations. As Weigel (2015) notes, graduate-to-undergraduate mentoring cultivates diversity in the field and allows undergraduate students to develop communication and research skills. While other colleges and schools at the university have established peer-mentoring programs with undergraduate upperclassmen, graduate student peer mentors can serve in this role at the SPH while the program grows. Additionally, as many undergraduate students at

the SPH view their graduate student TAs as being on par with faculty, graduate student mentors can effectively assume dual roles as peer and faculty mentors to this population. Similar to its series of career and professional development seminars for graduate students, the SPH has also established a mentoring program between first and second year MPH students. With an infrastructure already established, the SPH could adopt a similar program between graduate students and undergraduates, particularly TAs. In addition to their academic and classroom duties, graduate student TAs could also be required to serve as mentors for the undergraduate students, meeting with them individually on a regular basis, and offering them any guidance for their academic and professional development. The recommendation for the establishment of a graduate student/TA mentoring program is also highly actionable and can be implemented almost immediately for undergraduate public health students.

Expand Cooperative Learning Opportunities

A key takeaway from this study's results, is students' desire for more options for their cooperative learning experience. As noted throughout Chapter 4, students routinely cited the exploratory nature of the public health discipline as one of the main benefits to the program. However, they hope for more opportunities for relevant, practice-based opportunities in which they can hone their skills in public health to determine more specific career interests and goals. Undergraduate program leadership should collaborate with the university's central Career Center and the SPH's Director of Student Placement and Partnership Development to offer more cooperative learning experiences for these students.

The Director of Student Placement and Partnership Development works exclusively with the SPH's graduate students to assist them in identifying appropriate internships and practicum sites. While the cooperative learning experience is managed centrally by the university's Career Center, these departments could develop better strategies for networking with the SPH's partnering organizations to offer more experiences for undergraduates. Resnick et al. (2017) note that other undergraduate public health programs attribute building formalized relationships with the practice community as a means of strengthening their internships and related programs. Additionally, undergraduate program leadership can work with the Career Center to help them recognize that opportunities available to public health students can extend into other majors. For example, Student 64 noted that she "was looking for ones [co-ops] that maybe nursing students would apply to, but the thing is, it's [the database] not personalized to public health majors." Similarly, Student 1 remarked, "I would love to do a political science co-op." Recognizing the interdisciplinary nature of public health, expanded cooperative learning experiences can help undergraduate students explore a variety of career options and assist them in identifying their future career plans and goals. In addition to the faculty mentoring program recommendation, the expansion and further development of cooperative learning activities for undergraduate public health students would require more thoughtful, long-term planning, however it is highly actionable and could realistically be achieved within a two to three-year timeframe.

The previous recommendations can assist the SPH in developing a five-year strategic plan to help maximize student growth and retention. Although factors such

as participation in SPH events and interactions with faculty were found not to be significantly correlated with students' satisfaction and career and graduate school plans, the school should increase its efforts to offer more programming and activities for undergraduate public health students. Through more proactive communication, targeted events, and professional development, as well as an expansion of cooperative learning opportunities, the SPH can help increase inclusion and satisfaction among its undergraduate population. As the program continues to develop and grow, particularly as the undergraduate program's first students begin to graduate, future research will be key in helping to inform future policies and best practices.

Recommendations for Future Research

While undergraduate programs in public health have increased significantly, studies indicate that fewer than one in ten undergraduates seek graduate training in public health (Leider et al., 2015). As the SPH in this study begins to graduate its first students, monitoring student outcomes will be key to addressing the program's goals of serving as a pipeline to graduate study. Data collected from the electronic survey and focus group indicates that students do plan to pursue graduate study and employment in public health and related professions; however, students remarked their specific interests and goals were yet to be determined. The university's Office of Institutional Research disseminates an exit survey to graduating seniors and a one-year post-graduation outcomes survey. Monitoring the results of the exit survey and appropriately tracking student outcomes can better inform undergraduate students on their career and graduate school options beyond the bachelor's degree. As undergraduate tuition and fees continue to rise, undergraduates will be increasingly

cognizant of the public health program's return on investment and whether it appropriately provides a pathway to employment, graduate study, or professional school (Resnick et al., 2017).

Final Reflections

As noted in Chapter 1, the researcher held numerous assumptions on the experiences of undergraduate public health students at the start of this study. However, the results indicated that students were not nearly as unhappy as the researcher had anticipated. Student frustrations centered mainly on infrastructural issues, such as class scheduling, classroom availability, and cooperative learning opportunities. All study participants were female, which is representative of the larger population of SPH students, but the fact that no male students responded to the electronic survey or expressed an interest in participating in the focus group could suggest a lack of engagement and disconnect with male public health students. Future research could focus on male students' specific experiences and whether the program is meeting their academic and professional needs.

The inclusion of minor students, although helpful in providing feedback on this population, was not necessary and unlikely to contribute to the study's major findings. Public health minors understandably do not attend SPH events and other activities as the majority of their time is most likely devoted to their home department. In addition, the public health minor is intended to supplement existing coursework in the student's major discipline, and encourage population health thinking, not for minor students to pursue public health at the graduate level per se. Finally, with a small undergraduate population, a mixed-methods approach to this

study may not have been necessary. While the results of the electronic survey provided a helpful context, and further aided in the bracketing of researcher bias, the study's results were largely drawn from the qualitative data. Any future studies on the SPH's undergraduate population's experiences could be better accomplished through an interview or focus group approach. Electronic surveys would be more appropriate for the collection of quantifiable data, such as graduate outcomes and other measurable data points.

Conclusion

The present study sought to understand the experiences of undergraduate students in a graduate student-majority school of public health. Using a mixed-methods sequential transformative approach, study participants provided feedback on their experiences through an electronic survey modified from the NSSE. Following quantitative data collection, a focus group was conducted with seven undergraduate public health students. Data analyzed from the electronic survey found no significant correlations between participation in SPH events and overall student satisfaction. Similar results were found in regard to the relationship between frequency of interactions with faculty and students' post-graduate plans and the quality of faculty in relationship to students' overall satisfaction. Data collected from the focus group, however, revealed rich information and feedback on students' overall experiences, indicating that while students are satisfied with the program, improvements are needed.

Using the data from this study can aid the SPH in developing a five-year strategic plan for undergraduate program growth and improvement. Specifically, the

SPH can engage in more specialized and proactive communication with the undergraduate population to encourage a more inclusive environment. Additionally, the school could pilot a mentoring program between identified at-risk students and full-time faculty and a mentoring program between graduate and undergraduate students. Finally, increased collaboration and development of cooperative learning opportunities can aid undergraduate students in discovering their career interests and goals. Cultivating undergraduate students presents a unique opportunity for public health, as these students bring a drive and passion for the field, in addition to coming from diverse backgrounds. With continued program enhancements and development, undergraduate public health students from this SPH will be well-positioned to pursue their career interests and goals, which will ultimately lead to a more diverse and inclusive public health workforce.

References

Abbott, A. C., Boyd, M., Bristol, L. D., Brown, W. H., Geiger, J. C., Greeley, S. A., . . . Winslow, C. E. (1921). Standardization of public health training: Report of the committee of sixteen. *American Journal of Public Health, 11*(4), 371-375. doi:10.2105/AJPH.11.4.371

Allen, W. R. (1992). The color of success: African-American college student outcomes at predominantly white and historically black public colleges and universities. *Harvard Educational Review, 62*(1), 26.

Arbona, C., & Nora, A. (2007). The influence of academic and environmental factors on Hispanic college degree attainment. *The Review of Higher Education, 30*(3), 247-269. doi:10.1353/rhe.2007.0001

Arnold, L., Embry, E., & Fox, C. (2015). Advising undergraduate public health students: A phased approach. *Public Health Reports, 130*(4), 415-420.

Asgari, S. & Carter, F. (2016). Peer mentors can improve academic performance: A quasi-experimental study of peer mentorship in introductory courses. *Teaching of Psychology, 43*(2), 131-135. doi:10.1177/0098628316636288

Association of American Colleges & Universities. (2007). College learning for the new global century: A report from the National Leadership Council for Liberal Education and America's Promise. *Liberal Education, 93*(1), 36.

Association of Schools and Programs of Public Health. (2016). Retrieved from www.aspph.org.

Astin, A. W. (1975). *Preventing students from dropping out* (1st ed.). San Francisco, CA: Jossey-Bass.

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*(5), 518.

Astin, A. W. (2006). Making sense out of degree completion rates. *Journal of College Student Retention: Research, Theory & Practice, 7*(1-2), 5.

Baker, C. N. (2015). Gender differences in the experiences of African American college students: The effects of co-ethnic support and campus diversity. *Women, Gender, and Families of Color, 3*(1), 36-57.

Banks, K. H. (2010). African American college students' experience of racial discrimination and the role of college hassles. *Journal of College Student Development, 51*(1), 23-34. doi:10.1353/csd.0.0115

Braxton, J. M., Bray, N. J., & Berger, J. B. (2000). Faculty teaching skills and their influence on the college student departure process. *Journal of College Student Development, 41*(2), 215.

Cashman, S. B., & Seifer, S. D. (2008). Service-learning: An integral part of undergraduate public health. *American Journal of Preventive Medicine, 35*(3), 273.

Chang, M. J., Astin, A. W., & Kim, D. (2004). Cross-racial interaction among undergraduates: Some consequences, causes, and patterns. *Research in Higher Education, 45*(5), 529-553. doi:10.1023/B:RIHE.0000032327.45961.33

Council on Education for Public Health. (2016). Retrieved from www.ceph.org.

Council of Graduate Schools. (2013). Graduate school enrollments on the decline. Retrieved from http://cgsnet.org/graduate-school-enrollments-decline.

Creswell, J. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: SAGE.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE.

Creswell, J. (2015). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (5th ed.). Upper Saddle River, NJ: Pearson.

Destin, M., & Kosko, M. (2016). Motivating disadvantaged students toward the possibility of college. *Phi Delta Kappan, 97*(5), 8-12. doi:10.1177/0031721716629651

Dolan, T. G. (2008). Minority students and college success: Challenges and solutions. *Education Digest: Essential Readings Condensed for Quick Review, 73*(7), 27.

Engle, J., & Tinto, V. (2008). *Moving beyond access: College success for low-income, first-generation students.* Washington, D.C.: Pell Institute for the Study of Opportunity in Higher Education.

Enstrom, C., & Tinto, V. (2008). Access without support is not opportunity. *Change, 40*(1), 46.

Fee, E., & Bu, L. (2007). Models of public health education: Choices for the future? *Bulletin of the World Health Organization, 85*(12), 977-979. doi:10.2471/BLT.07.044883

Fink, J. E., & Inkelas, K. K. (2015). A history of learning communities within American higher education. *New Directions for Student Services, 2015*(149), 5-15. doi: 10.1002/ss.20113

Gebbie, K. M., Rosenstock, L., & Hernandez, L. M. (Eds.) (2003). *Who will keep the public healthy? Educating public health professionals for the 21st century*. Washington, D.C.: National Academies Press.

Gibson, E., & Willison, S. (2011). Graduate school learning curves: McNair Scholars' postbaccalaureate transitions. *Equity & Excellence in Education, 44*(2), 153-168. doi: 10.1080/10665684.2011.558416

Girves, J. E., & Wemmerus, V. (1988). Developing models of graduate student degree progress. *The Journal of Higher Education, 59*(2), 163-189.

Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains, N.Y: Longman.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597.

Guiffrida, D. A. (2006). Toward a cultural advancement of Tinto's theory. *The Review of Higher Education, 29*(4), 451-472. doi:10.1353/rhe.2006.0031

Gupta, A., & Turek, J. (2015). Empirical investigation of predictors of success in an MBA programme. *Education + Training, 57*(3), 279-289. doi:10.1108/ET-10-2012-0100

Hanson, W. E., Creswell, J. W., Plano Clark, V. L., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology, 52*(2), 224-235. doi:10.1037/0022-0167.52.2.224

Harsh, J. A., Maltese, A. V., & Tai, R. H. (2011). Undergraduate research experiences from a longitudinal perspective. *Journal of College Science Teaching, 41*(1), 84.

Holsinger, J., James, W., Lewis, A. L., & Chen, Q. (2015). Undergraduate public health education: Does it meet public health workforce needs? *Frontiers in Public Health, 3*, 1. doi:10.3389/fpubh.2015.00001

Ishiyama, J. T., & Hopkins, V. M. (2003). Assessing the impact of a graduate school preparation program on first-generation, low-income college students at a public liberal arts university. *Journal of College Student Retention, 4*(4), 393-405. doi:10.2190/CB17-UENX-N064-U1HQ

Johnson, B., Batia, A. S., & Haun, J. (2008). Perceived stress among graduate students: roles, responsibilities, & social support. *VAHPERD Journal, 29*(3), 31.

Johnson, B. & Christensen, L. (2012). *Educational research: Quantitative, qualitative, and mixed approaches* (4th ed.) Thousand Oaks, CA: SAGE.

Kabes, S., Lamb, D., & Engstrom, J. (2010). Graduate learning communities: Transforming educators. *Journal of College Teaching and Learning, 7*(5), 47.

Kim-Prieto, C., Copeland, H. L., Hopson, R., Simmons, T., & Leibowitz, M. J. (2013). The role of professional identity in graduate school success for under-represented minority students. *Biochemistry and Molecular Biology Education, 41*(2), 70-75. doi:10.1002/bmb.20673

Koh, H. K., Nowinski, J. M., & Piotrowski, J. J. (2011). A 2020 vision for educating the next generation of public health leaders. *American Journal of Preventive Medicine, 40*(2), 199-202. doi:10.1016/j.amepre.2010.09.018

Kraska, M. (2008). Retention of graduate students through learning communities. *Journal of Industrial Education, 45*(2), 54-70.

Kucsera, J., & Zimmaro, D. (2010). Comparing the effectiveness of intensive and traditional courses. *College Teaching, 58*(2), 62-68. doi:10.1080/87567550903583769

Lee, J. M. (2008). Articulation of undergraduate and graduate education in public health. *Public Health Reports*, *123*(Suppl. 2), 12-17.

Lee, J. M., & Friedman, L. H. (2015). Undergraduate public health: Lessons learned from undergraduate health administration education. *Frontiers in Public Health, 3*(38). doi:10.3389/fpubh.2015.00038

Lee, J. M., & Nowicki, M. (2005). Articulation of undergraduate and graduate education in health administration: Barriers and strategies for the future. *The Journal of Health Administration Education*, *22*(2), 221.

Leider, J. P., Castrucci, B. C., Plepys, C. M., Blakely, C., Burke, E., & Sprague, J. B. (2015). Characterizing the growth of the undergraduate public health major: U.S., 1992-2012. *Public Health Reports, 130*(1), 104.

Marques, J. (2012). The dynamics of accelerated learning. *Business Education & Accreditation*, 4(1), 101-112.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Miles, M. & Huberman, A. M. (1994) *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: SAGE.

Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *Proceedings of the National Academy of Sciences of the United States of America, 109*(41), 16474-16479. doi:10.1073/pnas.1211286109

National Survey of Student Engagement (2016). Retrieved from http://nsse.indiana.edu

Onwuegbuzie, A. J., & Leech, N. L. (2007). A call for qualitative power analyses. *Quality & Quantity, 41*(1), 105-121. doi:10.1007/s11135-005-1098-1

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students: Additional evidence on college experiences and outcomes. *The Journal of Higher Education, 75*(3), 249-284. doi:10.1353/jhe.2004.0016

Perrin, K., & Merrell, L. (2014). Undergraduate public health education: Alternative choices within the BSPH degree. *Frontiers in Public Health, 2*, (127). doi:10.3389/fpubh.2014.00127

Phinney, J. S., Dennis, J. M., & Chuateco, L. I. (2005). The role of motivation, parental support, and peer support in the academic success of ethnic minority first-generation college students. *Journal of College Student Development, 46*(3), 223-236. doi:10.1353/csd.2005.0023

Pike, G. R., & Kuh, G. D. (2005). First- and second-generation college students: A comparison of their engagement and intellectual development. *The Journal of Higher Education, 76*(3), 276-300. doi:10.1353/jhe.2005.0021

Ravid, R. (2011). *Practical statistics for educators* (4th ed.). Lanham, MD: Rowman & Littlefield.

Resnick, B., Selig, S., & Riegelman, R. (2017). An examination of the growing US undergraduate public health movement. *Public Health Reviews, 38*(1). doi:10.1186/s40985-016-0048-x

Riegelman, R. K. (2008). Undergraduate public health education: Past, present, and future. *American Journal of Preventive Medicine, 35*(3), 258.

Riegelman, R. K., & Albertine, S. (2011). Undergraduate public health at 4-year institutions. *American Journal of Preventive Medicine, 40*(2), 226-231. doi:10.1016/j.amepre.2010.10.013

Roe, K. (2009). Infusing public health education into the undergraduate curriculum: The experience of a comprehensive university. *Peer Review, 11*(3),19-22.

Rosenstock, L., Silver, G. B., Helsing, K., Evashwick, C., Katz, R., Klag, M., . . . Sumaya, C. (2008). Confronting the public health workforce crisis: ASPH statement on the public health workforce. *Public Health Reports, 123*(3), 395-398.

Saldaña, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Los Angeles, CA: SAGE.

Schmidt, C. K., Miles, J. R., & Welsh, A. C. (2011). Perceived discrimination and social support: The influences on career development and college adjustment of LGBT college students. *Journal of Career Development, 38*(4), 293-309. doi:10.1177/0894845310372615

Stake, R. E. (2011). *The art of case study research*. Thousand Oaks, CA: SAGE.

Straw, D. (2014). On mentoring at-risk students about college's intangibles. *Women in Higher Education, 23*(12), 17-19. doi:10.1002/whe.20146

Strayhorn, T. L. (2015). *Student development theory in higher education: A social psychological approach* [Core Concepts in Higher Education series]. London, UK: Routledge. Retrieved from http://www.ebrary.com

Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allison, K. W., Gregg, P. L., & Jalomo, R. (1994). The transition to college: Diverse students, diverse stories. *Research in Higher Education, 35*(1), 57-73. doi:10.1007/BF02496662

Tinto, V. (1997). Classrooms as communities: Exploring the educational character of student persistence. *The Journal of Higher Education, 68*(6), 599-623.

Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *The Review of Higher Education, 21*(2), 167.

Tinto, V. (2006). Research and practice of student retention: What next? *Journal of College Student Retention, 8*(1), 1.

Tinto, V. (2012). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press. Retrieved from http://www.ebrary.com

Wang, S. Tomlinson, E. C., & Noe, R. A. (2010). The role of mentor trust and protégé internal locus of control in formal mentoring relationships. *Journal of Applied Psychology*, *95*, 358-367.

Weigel, E. (2015). Modern graduate student mentors: Evidence-based best practices and special considerations for mentoring undergraduates in ecology and evolution. *Ideas in Ecology and Evolution, 8*(1), 14-25. doi:10.4033/iee.2015.8.3.c

Welch, W. H., & Rose, W. (1916). *The Welch-Rose report: A public health classic.* Washington, D.C.: Delta Omega Honorary Public Health Society.

White, J. W., & Lowenthal, P. R. (2011). Minority college students and tacit 'codes of power': Developing academic discourses and identities.. *The Review of Higher Education, 34*(2), 283-318. doi:10.1353/rhe.2010.0028

White, L. E. (2015). Success of the undergraduate public health program at Tulane University. *Frontiers in Public Health, 3*, 60. doi:10.3389/fpubh.2015.00060

Yin, R. K. (2013). *Case study research: Design and methods* (5th ed.). Los Angeles, CA: SAGE.

Zea, M. C., Jarama, S. L., & Bianchi, F. T. (1995). Social support and psychosocial competence: Explaining the adaptation to college of ethnically diverse students. *American Journal of Community Psychology, 23*(4), 509-531. doi:10.1007/BF0250696

Appendix A: Electronic Survey
Modified from the National Survey of Student Engagement (2016)

1. **Please select your academic program:**

    a. Public health major
    b. Public health minor

2. **If you are a public health minor, please indicate your major(s):**

3. **During the current school year at the School of Public Health, about how often have you done the following?**

Asked questions or contributed to course discussions

Very often Often Sometimes Never

Come to class without completing readings or assignments

Very often Often Sometimes Never

Attended a Population Health Spotlight, journal club or other School of Public Health activity

Very often Often Sometimes Never

Asked another student to help you understand course material

Very often Often Sometimes Never

Explained course material to one or more students

Very often Often Sometimes Never

Prepared for exams by discussing or working through course material with other students

Very often Often Sometimes Never

Worked with other students on course projects or assignments

Very often Often Sometimes Never

4. **During the current school year at the School of Public Health, about how often have you done the following?**

Combined ideas from public health or other courses when completing assignments

Very often Often Sometimes Never

Connected your learning to societal problems or issues

Very often Often Sometimes Never

Included diverse perspectives in course discussions or assignments

Very often Often Sometimes Never

Tried to better understand someone else's views by imagining how an issue looks from his or her perspective

Very often Often Sometimes Never

Learned something that changed the way you understand an issue or concept

Very often Often Sometimes Never

5. **How often have you done the following?**

Discussed career or graduate school plans with a School of Public Health faculty member

Very often Often Sometimes Never

Worked with a School of Public Health faculty member on activities other than coursework

Very often Often Sometimes Never

Discussed course topics, ideas, or concepts with a School of Public Health faculty member outside of class

Very often Often Sometimes Never

Discussed your academic performance with a School of Public Health faculty member

Very often Often Sometimes Never

6. **During the current school year, to what extent have your School of Public Health instructors done the following?**

Clearly explained course goals and requirements

Very Much Quite a bit Some Very Little

Taught course sessions in an organized way

Very Much Quite a bit Some Very Little

Used examples or illustrations to explain difficult points

Very Much Quite a bit Some Very Little

Provided feedback on a draft or work in progress

Very Much Quite a bit Some Very Little

Provided prompt and detailed feedback on tests or completed assignments

Very Much Quite a bit Some Very Little

7. **During the current school year at the School of Public Health, about how often have you had discussions with people from the following groups?**

People of a race or ethnicity other than your own

Very often Often Sometimes Never

People from an economic background other than your own

Very often Often Sometimes Never

People with religious beliefs other than your own

Very often Often Sometimes Never

People with political views other than your own

Very often Often Sometimes Never

8. **To what extent have your public health courses challenged you to do your best work?**

Not at all- 1 2 3 4 5 - very much

9. **Indicate the quality of your interactions with the following people at the School of Public Health**

Undergraduate students

Poor – 1 2 3 4 5 - Excellent Not applicable

Graduate students

Poor – 1 2 3 4 5- Excellent Not applicable

Academic Advisors

Poor – 1 2 3 4 5 - Excellent Not applicable

Faculty

Poor – 1 2 3 4 5- Excellent Not applicable

Student services staff

Poor – 1 2 3 4 5 - Excellent Not applicable

Other administrative staff and offices

Poor – 1 2 3 4 5 - Excellent Not applicable

10. **What School of Public Health faculty member(s) have been the most influential during your time at the School?**

11. **How much does the School of Public Health emphasize the following?**

Spending significant amounts of time studying and on academic work

Very much Quite a bit Some Very little

Providing support to help students succeed academically

Very much Quite a bit Some Very little

Using learning support services (tutoring, writing center, etc.)

Very much Quite a bit Some Very little

Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)

Very much Quite a bit Some Very little

Providing opportunities to be involved with the school socially

Very much Quite a bit Some Very little

Providing support for your overall well-being

Very much Quite a bit Some Very little

Helping you manage non-academic responsibilities

Very much Quite a bit Some Very little

Attending School of Public Health activities and events

Very much Quite a bit Some Very little

12. How would you evaluate your overall educational experience at the School of Public Health?

a. Excellent
b. Good
c. Fair
d. Poor

13. If you could start over again, would you still pursue a major or minor in public health?

a. Definitely yes
b. Probably yes
c. Probably no
e. Definitely no

14. What are your plans post-graduation? (check all that apply)

a. I plan to pursue employment in public health or a related sector
b. I plan to pursue employment not related to public health
c. I plan to pursue graduate training in public health

d. I plan to pursue graduate training in another discipline (please specify)
e. Undecided

15. Please provide any additional comments or feedback that you would like to share on the quality of your educational experiences at the School of Public Health.

Personal Background

1. **What is your class level?**

a. Freshmen
b. Sophomore
c. Junior
d. Senior

2. **Are you a full-time student?**

a. Yes
b. No

3. **How many credits are you carrying this term?**

a. Less than 12
b. 12-15
c. 16-18
d. 18-20

4. **What is your cumulative GPA?**

5. **Did you begin college at Drexel University or elsewhere?**

a. Started here
b. Started elsewhere

6. **If you are a public health major, did you begin your studies at the School of Public Health or another major?**

a. Started in public health
b. Started in another major (please specify)

7. **What is the highest level of education completed by either of your parents?**

a. Did not finish high school
b. High school diploma/GED
c. Attended college but did not complete degree

d. Associate's degree (AA, AS, etc.)
e. Bachelor's degree (BA, BS, etc.)
f. Master's degree (MA, MS, etc.)
g. Doctoral or professional degree (PhD, JD, MD, etc.)

8. What is your gender identity?

a. Male
b. Female
c. Other (please specify)
d. I prefer not to respond

9. What is your racial or ethnic identification?

a. American Indian/Alaskan Native
b. Asian
c. Black or African American
d. Hispanic or Latino
e. Native Hawaiian or Pacific Islander
f. White
g. Other
h. Multi-racial
i. I prefer not to respond

10. Which of the following best describes your living arrangements?

a. Residence hall or other campus housing
b. Off-campus within walking distance to the university
c. Off-campus farther than walking distance to the university
d. Other (please specify)

11. Which of the following best describes your sexual orientation?

a. Heterosexual
b. Gay
c. Lesbian
d. Bisexual
e. Transgender
f. Questioning or unsure
g. I prefer not to respond

Raffle Entry and Follow-up

1. If you are interested in entering a raffle for a $25 Amazon gift card, please provide your name and email address below.

First Name Last Name Email Address

2. If you are interested in participating in a follow-up focus group, please provide your name and email address below.

First Name Last Name Email Address

Thank you for participating!

Appendix B: Email Invitation

Dear School of Public Health Undergraduate Students,

I am a doctoral student the Drexel University College of Education, and I invite you to participate in my dissertation research which will focus on undergraduate student experiences at the School of Public Health. All students who complete the survey will have the opportunity to be entered into a raffle for a $25 Amazon gift card.

Undergraduate students interested in sharing their experiences are asked to complete an electronic survey accessible at the following: (URL TBD)

This survey is 15 questions in length in addition to questions on your personal background. It is anticipated that this survey should take no longer than 10 minutes to complete. The survey will close on (date).

All information gathered from this survey will be kept confidential, and only those interested in entering the gift card raffle will be required to enter their names and contact information. Students will also have the opportunity to participate in subsequent focus groups.

If you have any questions, please do not hesitate to contact me. Thank you for your participation.

Appendix C: Semi-Structured Focus Group Protocol

1) What factor most influenced your decision to declare a major in public health?
2) If you are majoring in another discipline, why did you decide to declare a minor in public health?
3) What public health course have you enjoyed the most? Why?
4) What do you find most challenging about public health coursework?
5) What are your career goals?
6) To what extent has being a public health major or minor influenced your career goals?
7) Do you participate in School of Public Health activities such as Population Health Spotlight, guest lectures and related events? Why or why not?
8) Discuss your experiences with faculty at the School of Public Health. Have they been accessible and helpful?
9) Discuss your experiences, if any, with School of Public Health graduate students.
10) As an undergraduate student do you feel disconnected or alienated from the School of Public Health community? Why or why not?

Appendix D: Inventory of College/School Student Success and Retention Programming

College/School	Learning Communities (Y/N)	Faculty Mentorship (Y/N)	Service-Learning (Y/N)	Other
College of Business				
College of Arts and Sciences				
College of Engineering				
College of Nursing and Health Professions				
College of Media Arts and Design				
School of Biomedical Engineering and Health Systems				
College of Computing and Informatics				
School of Education				
Center for Hospitality and Sport Management				